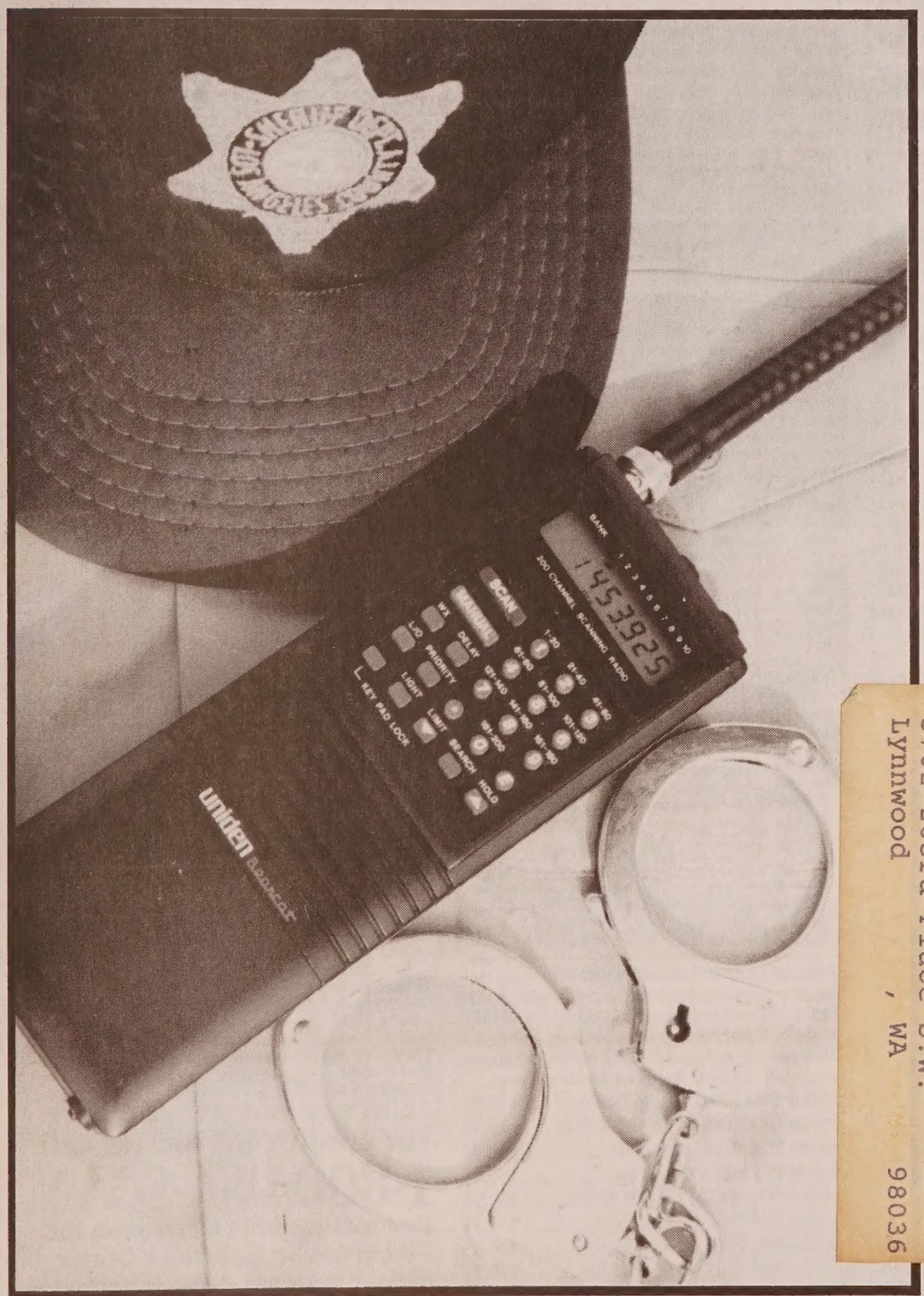
Official Publication of the Bearcat Radio Club

$3.50

NATIONAL SCANNING

VOLUME 4, NUMBER 6 • NOVEMBER/DECEMBER 1993



Some Tips on
Using Multiple Scanners

Silver Stars
On Patrol with San Diego's Finest

Scanning the
Saint Lawrence

More
Lots of Scanning You Can't Without

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COMMUNICATIONS ELECTRONICS INC.
Emergency Operations Center

We're introducing new Uniden *Bearcat* scanners that are just what you've been searching for. Order your *Bearcat* scanner today.

25th Anniversary Special

Save $25.00

on Bearcat® 8500XLT or 2500XLT scanners

Celebrate our 25th anniversary with special savings on the scanners listed in this coupon. This coupon must be included with your prepaid order. Credit cards and quantity discounts are excluded from this offer. Offer valid only on orders mailed directly to Communications Electronics Inc., P.O. Box 1045 - Dept. NS1193, Ann Arbor, Michigan 48106-1045 U.S.A. Coupon expires January 31, 1994. Coupon may not be used in conjunction with any other offer. Coupon may be photocopied. Add $15.00 for shipping in the continental United States of America.

Radio Scanners

Bearcat® 2500XLT-G

List price $649.95/**CE price $344.95/SPECIAL**
400 Channels • 20 Banks • Turbo Scan
Rotary tuner feature • Auto Store • Auto Sort
Size: 2-3/4" Wide x 1-1/2" Deep x 7-1/2" High
Frequency Coverage: 25.0000 - 549.9950, 760.0000 - 823.9950, 849.0125 - 868.9950, 894.0125 - 1,300.0000 MHz.

Signal intelligence experts, public safety agencies and people with inquiring minds that want to know, have asked us for a world class *handheld* scanner that can intercept just about any radio transmission. The new Bearcat 2500XLT has what you want. You can program frequencies such as police, fire, emergency, race cars, marine, military aircraft, weather, and other broadcasts into 20 banks of 20 channels each. The new rotary tuner feature enables rapid and easy selection of channels and frequencies. With the AUTO STORE feature, you can automatically program any channel. You can also scan all 400 channels at 100 channels-per-second speed because the Bearcat 2500XLT has TURBO SCAN built-in. To make this scanner even better, the BC2500XLT has AUTO SORT - an automatic frequency sorting feature for faster scanning within each bank. Order your scanner from CEI.

For more information on Bearcat radio scanners or to join the Bearcat Radio Club, call Mr. Scanner at 1-800-423-1331. To order any Bearcat radio product from Communications Electronics Inc. call 1-800-USA-SCAN.

Great Deals on Bearcat Scanners

Bearcat 8500XLT-G base/mobile	$369.95
Bearcat 890XLT-G base/mobile	$254.95
Bearcat 2500XLT-G handheld	$344.95
Bearcat 855XLT-G base	$159.95
Bearcat 760XLT-G base/mobile/SPECIAL	$199.95
Bearcat 700A-G info mobile	$169.95
Bearcat 560XLA-G base/mobile	$89.95
Bearcat 350A-G info mobile	$119.95
Bearcat 210XLT-G base/SPECIAL	$119.95
Bearcat 200XLT-G handheld/SPECIAL	$208.95
Bearcat 148XLT-G base w/ weather alert.	$94.95
Bearcat 147XLT-G base	$83.95
Bearcat 100XLT-G handheld	$149.95
Bearcat BCT2-G info mobile	$139.95

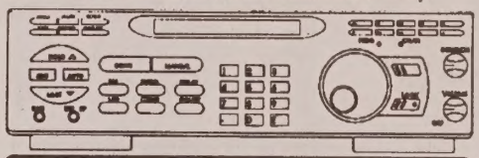
New FCC Rules Mean Last Buying Opportunity for Radio Scanners

On April 19, 1993, the FCC amended Parts 2 and 15 of its rules to prohibit the manufacture and importation of scanning radios capable of intercepting the 800 MHz. cellular telephone service. Supplies of full coverage 800 MHz. scanners are in *very* short supply. If you need technical assistance or recommendations to locate a special scanner or solve a communications problem, call the **Communications Electronics Inc. technical support hotline for $2.00 per minute at 1-900-555-SCAN.**

Bearcat® 8500XLT-G

List price $689.95/**CE price $369.95/SPECIAL**
500 Channels • 20 banks • Alphanumeric display
Turbo Scan • VFO Control • Priority channels
Auto Store • Auto Recording • Reception counter
Frequency step resolution 5, 12.5, 25 & 50 KHz.
Size: 10-1/2" Wide x 7-1/2" Deep x 3-3/8" High
Frequency Coverage:
25.000 - 28.995 MHz. (AM), 29.000 - 54.000 MHz. (NFM), 54.000 - 71.995 MHz. (WFM), 72.000 - 75.995 MHz. (NFM), 76.000 - 107.995 MHz. (WFM), 108.000 - 136.995 MHz. (AM) 137.000 - 173.995 MHz. (NFM), 174.000 - 215.995 MHz. (WFM), 216.000 - 224.995 MHz. (NFM), 225.000 - 399.995 MHz. (AM) 400.000 - 511.995 MHz. (NFM), 512.000 - 549.995 MHz. (WFM) 760.000 - 823.9875 MHz (NFM), 849.0125 - 868.9875 MHz (NFM) 894.0125 - 1,300.000 MHz. (NFM).

The new Bearcat 8500XLT gives you pure scanning satisfaction with amazing features like Turbo Scan. This lightning-fast technology featuring a triple conversion RF system, enables Uniden's best scanner to scan and search up to 100 channels per second. Because the frequency coverage is so large, a very fast scanning system is essential to keep up with the action. Other features include ***VFO Control*** - (Variable Frequency Oscillator) which allows you to adjust the large rotary tuner to select the desired frequency or channel. ***Counter Display*** - Lets you count and record each channel while scanning. ***Auto Store*** - Automatically stores all active frequencies within the specified bank(s). ***Auto Recording*** - This feature lets you record channel activity from the scanner onto a tape recorder. You can even get an optional ***CTCSS Tone Board*** (Continuous Tone Control Squelch System) which allows the squelch to be broken during scanning only when a correct CTCSS tone is received. ***20 banks*** - Each bank contains 25 channels, useful for storing similar frequencies in order to maintain faster scanning cycles. For maximum scanning enjoyment, order the following optional accessories: PS001 Cigarette lighter power cord for temporary operation from your vehicle's cigarette lighter $14.95; PS002 DC power cord - enables permanent operation from your vehicle's fuse box $14.95; MB001 Mobile mounting bracket $14.95; BC005 CTCSS Tone Board $54.95; EX711 External speaker with mounting bracket & 10 feet of cable with plug attached $19.95. The BC8500XLT comes with AC adapter, telescopic antenna, owner's manual and one year limited warranty from Uniden. Order your BC8500XLT from Communicatons Electronics Inc. today.



CB/GMRS Radios

The Uniden GMR100 is a handheld GMRS UHF 2-way radio transceiver that has these eight frequencies installed: 462.550, 462.725, 462.5875, 462.6125, 462.6375, 462.675, 462.6625 and 462.6875 MHz. This one watt radio comes with flexible rubber antenna, rechargeable ni-cad battery, AC adapter/charger, belt clip, F.C.C. license application and more.

Uniden GMR100-G GMRS Handheld	$169.95
Uniden GRANTXL-G SSB CB Mobile	$149.95
Uniden PC66XL-G CB Mobile	$78.95
Uniden PC76XL-G CB Mobile	$99.95
Uniden PC122XL-G SSB CB Mobile	$107.95
Uniden PRO330E-G CB Remote	$99.95
Uniden PRO510XL-G CB Mobile	$36.95
Uniden PRO520XL-G CB Mobile	$49.95
Uniden PRO538W-G CB & Weather	$69.95

Shortwave

ICOM R1-G ultra compact handheld wideband receiver	$469.95
ICOM R100-G mobile 500 kHz.-1.8 GHz./121 memory	$649.95
ICOM R71A-G 100 kHz.-30 MHz. base (add $39.00 shipping)	$1,029.95
ICOM R72A-G 100 kHz.-30 MHz. base (add $39.00 shipping)	$954.95
ICOM R7000-G base with 99 memory (add $49.00 shipping)	$1,249.95
ICOM R7100-G base with 900 memory (add $49.00 shipping)	$1,289.95
ICOM R9000-G base 30 kHz.-2 GHz. (add $149.00 shipping)	$4,999.95
ICOM AH7000-G super wideband discone type antenna	$109.95
Grundig Satellit 700-G portable with 512 memory & AC adapter	$449.95
Grundig Satellit 500-G portable with 42 memory & AC adapter	$349.95
Grundig Cosmopolit-G with integrated mini-cassette recorder	$179.95
Grundig Yacht Boy 230-G portable shortwave	$139.95
Grundig Traveller 2-G portable shortwave	$79.95
Sangean ATS202-G ultra compact 20 memory shortwave	$79.95
Sangean ATS606-G ultra compact 45 memory shortwave	$149.95
Sangean ATS606P-G shortwave with antenna & AC adapter	$169.95
Sangean ATS800-G portable 20 memory shortwave	$79.95
Sangean ATS803A-G portable with SSB reception & AC adapter	$159.95
Sangean ATS808-G portable 45 memory shortwave	$159.95
Sangean ATS818-G portable without cassette recorder	$189.95
Sangean ATS818CS-G with cassette recorder	$209.95
Sangean ANT60-G portable shortwave antenna	$9.95

Weather Stations

Public safety agencies responding to hazardous materials incidents must have accurate, up-to-date weather information. The Davis Weather Monitor II is our top-of-the-line weather station which combines essential weather monitoring functions into one incredible package. Glance at the display, and see wind direction and wind speed on the compass rose. Check the barometric trend arrow to see if the pressure is rising or falling. Our package deal includes the new high resolution 1/100 inch rain collector part #7852-G, and the external temperature/humidity sensor, part #7859-G. The package deal is order #DAV1-G for $524.95 plus $15.00 shipping. If you have a personal computer, when you order the optional Weatherlink computer software for $149.95, you'll have a powerful computerized weather station at an incredible price. For the IBM PC or equivalent order part #7862-G. For Apple Mac Plus or higher including Quadra or PowerBook, order part #7866-G.

Other neat stuff

Cobra CP910-G 900 MHz. spread spectrum cordless phone	$299.95
ICOM GP22-F handheld global positioning system	$699.95
WR200-G weather radio with storm alert	$39.95
RELM WHS150-G VHF handheld 5 watt, 16 ch. transceiver	$319.95
RELM RH256NB-G VHF 25 watt synthesized transceiver	$289.95
Ranger RCI2950-G 25 watt 10 meter ham radio	$244.95
Ranger RCI2970-G 100 watt 10 meter ham radio	$369.95
Uniden LRD9000W-G Laser/Radar Detector	$169.95
PWB-G Passport to Worldband Radio by IBS	$10.95
POL1-G Police Call for CT, ME, MA, NH, NY, RI, VT	$5.95
POL2-G Police Call for DE, MD, NJ, PA	$5.95
POL3-G Police Call for Michigan & Ohio	$5.95
POL4-G Police Call for IL, IN, KY, WI	$5.95
POL5-G Police Call for IA, KS, MN, MO, NE, ND, SD	$5.95
POL6-G Police Call for DC, FL, GA, NC, PR, SC, VA, WV	$5.95
POL7-G Police Call for AL, AR, LA, MS, OK, TN, TX	$5.95
POL8-G Police Call for AZ, CO, ID, MT, NM, NV, UT, WY	$5.95
POL9-G Police Call for California, Oregon & Washington	$5.95
USAMMBNC-G magnet mount scanner antenna with BNC	$29.95
USAK-G VHF scanner/VHF transmitting antenna with PL259	$29.95
USASGMBNC-G glass mount scanner ant with BNC connector	$29.95
USASGMM-G glass mount scanner antenna with Motorola jack	$29.95

Buy with confidence

It's easy to order from CEI. **Mail orders to:** Communications Electronics Inc., Emergency Operations Center, P.O. Box 1045, Ann Arbor, Michigan 48106 U.S.A. Add $15.00 per radio for U.P.S. ground shipping and handling in the continental U.S.A unless otherwise stated. Add $8.00 shipping for all accessories and publications. Add $8.00 shipping per antenna. For Canada, Puerto Rico, Hawaii, Alaska, P.O. Box, or APO/FPO delivery, shipping charges are two times continental U.S. rates. Michigan residents add state sales tax. No COD's. 10% surcharge for net 10 billing to qualified accounts. All sales are subject to availability, acceptance and verification. Prices, terms and specifications are subject to change without notice. We welcome your Discover, Visa, American Express or MasterCard. Call 1-800-USA-SCAN to order toll-free. Call 313-996-8888 if outside the U.S.A. FAX anytime, dial 313-663-8888. Order your electronic equipment from Communications Electronics Inc. today.

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For credit card orders call

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NATIONAL SCANNING

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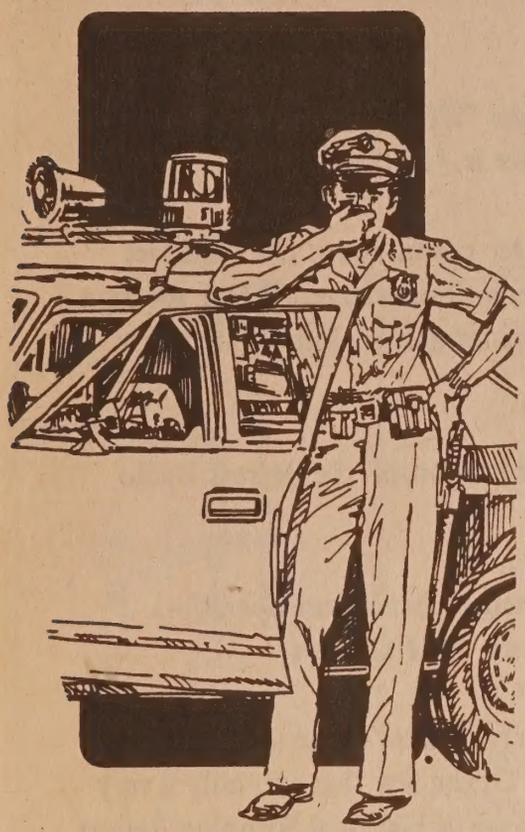

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National Scanning Report
Box 360, Wagontown, PA 19376

National Scanning Report
is the official publication of the
Bearcat Radio Club.
Subscription & Membership,
Box 291918, Kettering, OH 45429

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Cover photo by Laura Quarantiello.

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Who Are We?

At least once a week, we receive a letter that goes something like this: "Which one of the two major scanner manufacturers owns National Scanning magazine?" The answer is, "neither."

The idea that we're somehow owned by a major scanner manufacturer comes about from the fact that many of you first found out about us through a flyer stuffed in with your scanner. When you sign up for membership in the Bearcat Radio Club, for example, you get this magazine. But we are not a scanner manufacturer.

We are not the Bearcat Radio Club. We are, proudly, the official publication of the Bearcat Radio Club but we do not own the Bearcat Radio Club.

We are National Scanning Report magazine. National Scanning is a small, family-run operation. We've been around for some time, publishing a radio hobby full-time for all of 11 years.

Unlike other magazines, NatScan is not financed by advertising dollars. It didn't take us too long to realize that there just aren't that many buisiness involved in scanning. Of the few that are, only a very small handful can afford to advertise. (In fact, it costs more to print a page of National Scanning Report than we get for a full-page ad. In other words, we are currently subsidizing the price of advertisements in National Scanning Report. But we know that readers enjoy seeing the latest products and comparing prices, so we continue to provide this service.)

Because of this lack of advertising dollars, we formed DX Radio Supply back in 1982. When you buy books and accessories from DX Radio Supply, you are actually helping to make National Scanning possible. Let the big companies sell radios and other big ticket items! But when you buy a book or small accessory for your scanner from DX Radio Supply, the money stays right here at home, making it possible for us to pay our staff of writers and support personnel. No, we don't have a toll-free number or a glitzy store-front office. Instead, we devote our time, energy and money to making National Scanning the best radio magazine anywhere! That, in a nutshell, is who we are and what we do.

As the saying goes, "Thanks to you, it's working!"

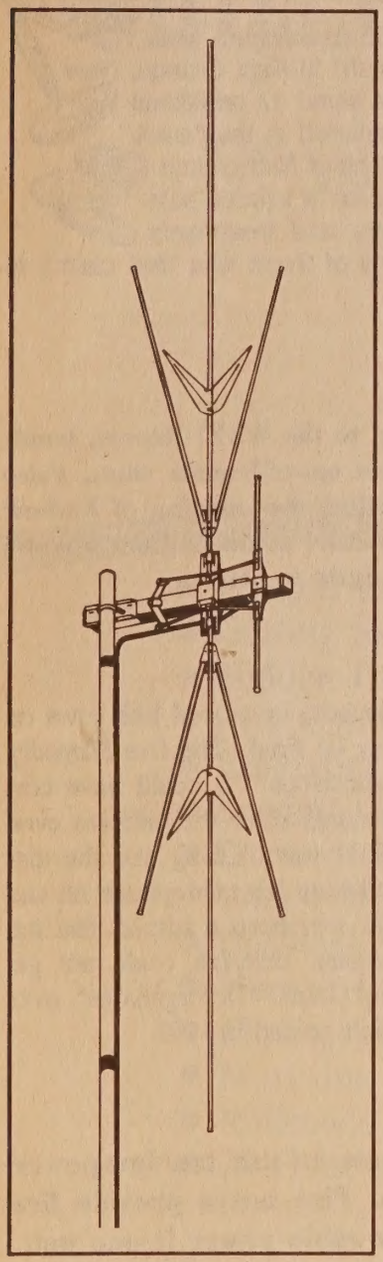
Larry

Larry Miller
Publisher

The Reviews Are In!

"The Scantenna -- Five Stars"

★★★★★



"I'M FOUR COUNTIES AWAY AND NOW I CAN HEAR MILWAUKEE!"
--Pete Edwards, Lake Geneva, Wisconsin

"I CAN HEAR THINGS WITH MY SCANTENNA THAT I NEVER KNEW EXISTED BEFORE!"
--Ken Peters, Los Angeles, California

"I'VE THROWN AWAY THAT LITTLE WHIP ANTENNA THAT CAME WITH MY SCANNER."
--Carroll Ethridge, Berkey City, Tennessee

"WOW! WHAT A DIFFERENCE! THE SCANTENNA IS THE BEST!"
--Travis Lantz, Iowa City, Iowa

There's an old saying among communications specialists: your scanner is only as good as your antenna.

Get the most out of your scanner with the famous Scantenna. Designed for use with both handheld and base scanners, it dramatically increases the range of your radio by miles. Actual distance depends on local terrain and height at which you mount the antenna. The Scantenna provides continuous frequency coverage from 25--1300 MHZ providing superb reception of communications of all types. And it comes with a mounting kit and 50' of RG-59/U cable.

The Scantenna is available from DX Radio Supply for $39.95 plus $5.00 UPS. Optional Motorola to BNC connector $3.95. Send check or money order to P.O. Box 360, Wagontown, PA 19376. Or use your Mastercard or Visa and call our 24-hour order line, 215 273-7823.

The Scantenna is a quality antenna manufactured in the U.S. by AntennaCrafters, a firm well-known for its TV and FM antennas.

Please send me a Scantenna. Here's my check or money order for $39.95 plus $5.00 UPS shipping. DX Radio Supply, Box 360, Wagontown, PA 19376.

Name ----------

Street Address ----------

City ---------- **State** --------- **Zip** ----------

Please bill my bank card. My MC or VISA number is:

---------- **Expiry Date** ----------

Signature ----------

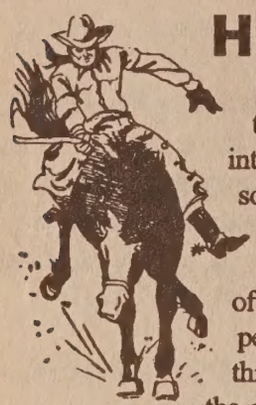
Radio In Action Radio In Action Radio In Action

Scanning for Cash – And Getting Caught

It was, I suppose, much like any other big city transit crash. An ordinary bus carrying 15 passengers, was hit from behind by a car. The car was traveling at less than 10 miles an hour. But this "crash" in East Orange, New Jersey, was different. The accident was a sting. Inside the bus, video cameras whirled as some 17 additional people scrambled onto the vehicle before police arrived. All later filed claims for injuries suffered in the "crash" as did two others who were never anywhere near the scene. So far, doctors and lawyers have filed claims against the bus company's insurer amounting to hundreds of thousands of dollars of treatments of injuries said to stem from the accident. Further, many of the doctors billed not only for office visits and treatments rendered, but also for visits that never took place. According to the *New York Times*, many of those who filed claims allegedly used scanners to listen for transit crash "opportunities."

Cellular Phones Spook Britain

Cellular telephones have been taking a beating in the British press lately. According to the W5YI Report, tennis officials at Wimbledon had to shut off the electronic court sensors that normally detect out-of-bounds shots. False readings were being caused by interference from nearby cellular telephones. In London, the opening of Andrew Lloyd Weber's new musical, "Sunset Boulevard," was delayed for 13 days until technicians could find out why the hydraulic pumps on the scenery were turning on by themselves. Cellular phones were again to blame.



Horsing Around

Five officers who allegedly broadcast love songs, made kissing sounds, or mooed like cows on their police radios in Hialeah, Florida, face criminal charges and may be fired. The five allegedly interrupted the department's main radio channel, blocking other transmissions. "It could have cost somebody their life," said internal affairs Detective Jimmy Garcia. Records show that officers even interrupted emergency calls, including one incident in which a child was choking and the dispatcher could not get on the radio because one of the officers was clicking his microphone on and off. In another case, dispatch tried to warn an officer who was about to apprehend a suspect that the person he was approasching was armed with a gun and a knife. Again, dispatch could not get through. This time an officer was reportedly blaring portions of Nat king Cole's "Unforgettable" over the radio. The interference began over two years ago, A formal investigation started in 1992.

Fire Box Frequencies

The Federal Communications Commission is now allowing fire departments to use ten low-power mobile radio frequencies in the 72 to 76 MHz band for fire box operations. Fire boxes provide fire alarm notification and a means of monitoring vacant buildings and offices. Allowable power is one watt. Currently, fire call boxes share frequencies with other stations that can operate with up to 300 watts of power. On the 10 new channels, all users are restricted to 1 watt.

406.025 MHz Emergency Locator Beacons

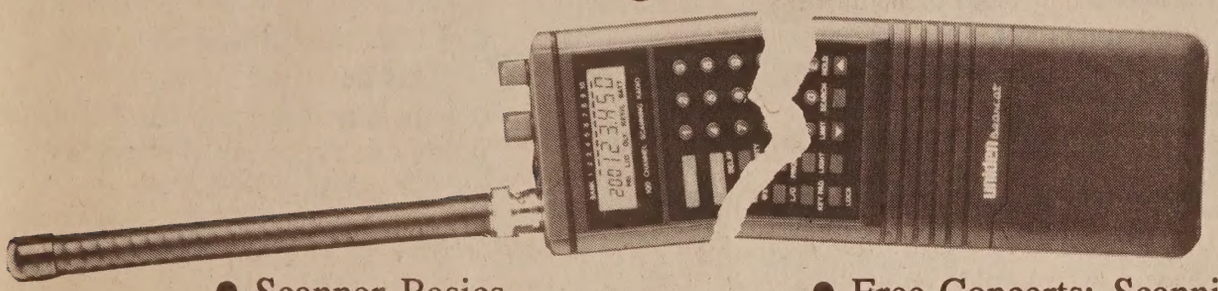
The FCC has officially authorized the use of 406.025 MHz for aircraft emergency locator transmitters (ELTs) on aircraft. The 406.0 to 406.1 MHz band was set aside in 1988 for the exclusive use of low-power, earth-to-space emergency position indicating radio beacons (EPIRBS). The new ruling simply adds ELTs to the frequency.

Thank to the following *National Scanning* readers who sent in clippings this month. Keith Gifford, Anaheim, California; Henry Von Kroge, E. Patchogue, New York; Richard Kudrick, Trenton, New Jersey; Pat Lornell, Boulder, Colorado; Les Mattson, Gibbstown, New Jersey; Jack McCartan, Newark, Delaware; Peter Shunk, Port Jefferson, New York. If you see a newspaper article that you think should go in NatScan, pass it along. The address is P.O. Box 360, Wagontown, PA 19376.

America's #1 Selling Scanner Book!

Citizen's Guide to Scanning

"If you don't have a copy, you're missing half the action."



- Scanner Basics
- Getting Started
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- Scanning Aviation Disasters
- Cordless Phones: Knowing Your Neighbors Intimately
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- Free Concerts: Scanning the Entertainment Industry
- FBI
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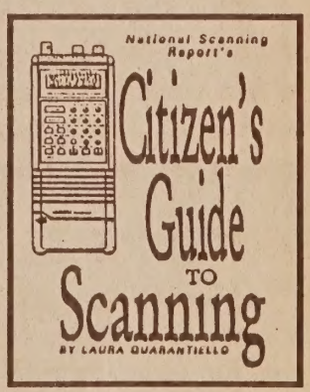
- "Top Gun" Fighter Pilots
- Emergency/Disaster Communications
- Much, Much More!



Please send me the *Citizen's Guide to Scanning* for just $19.95 plus $3.50 UPS or $2.50 book rate shipping. I have enclosed a check, money order or Visa/Mastercard no. and expiry date. (PA res. add 6% sales tax. Canadian res., please order by bank card only.)

Name _____

Shipping Address _____

City _____ State _____ Zip _____ Phone _____

Total Enclosed _____ VISA/Mastercard _____ Expiry _____

DX Radio Supply P.O. Box 360, Wagontown, PA 19376 • 215 273-7823 24 hours

New 220 MHz Band for Public Safety and Business Users

The Federal Communications Commission has approved and is now licensing users in the new 220 to 222 MHz band previously assigned to the Amateur Radio Service. The first five-channel trunked system in the United States in now operational in downtown Houston, Texas located in the Texas Commerce Tower.

The new 200 channels have been assigned to non-commerical (Business) users for use in the internal operation of the business, to Commercial (Private Carriers) to provide communications service to other private services on a commercial basis, and Governmental and Public Safety users.

The 220 MHz Channel Plan provides for the licensing of nationwide systems, conventional (non-trunked) and Trunked Systems. The new Emergency Radio Service has been assigned channels 181 to 185.

In this channel plan, base stations and repeaters operate between 220.0025 and 220.9975 MHz and mobiles and control stations can be found between 221.0025 and 221.9975 MHz.

This new Band with 200 channels and narrow band technology is expected to provide a partial solution to the shortage of avaibale frequencies.

220 MHz Channel Plan

Channel	Frequency	Comments
1	220.0025	Trunked Group -1
2	220.0075	Trunked Group -2
3	220.0125	Trunked Group -3
4	220.0175	Trunked Group -4
5	220.0225	Trunked Group -5
6	220.0275	Trunked Group -6
7	220.0325	Trunked Group -7
8	220.0375	Trunked Group -8
9	220.0425	Trunked Group -9
10	220.0475	Trunked Group -10
11	220.0525	Trunked Group -11
12	220.0575	Trunked Group -12
13	220.0626	Trunked Group -13
14	220.0675	Trunked Group -14
15	220.0725	Trunked Group -15
16	220.0775	Trunked Group -16
17	220.0825	Trunked Group -17
18	220.0875	Trunked Group -18
19	220.0925	Trunked Group -19
20	220.0975	Trunked Group -20
21	220.1025	**********
22	220.1075	Nationwide Commercial
23	220.1125	Private Carrier
24	220.1175	5 Channel Block
25	220.1225	**********
26	220.1275	**********
27	220.1325	Nationwide Commercial
28	220.1375	Private Carrier
29	220.1425	5 Channel Block
30	220.1475	**********
31	220.1525	Trunked Group -1
32	220.1575	Trunked Group -2
33	220.1625	Trunked Group -3
34	220.1675	Trunked Group -4
35	220.1725	Trunked Group -5
36	220.1775	Trunked Group -6
37	220.1825	Trunked Group -7
38	220.1875	Trunked Group -8
39	220.1925	Trunked Group -9
40	220.1975	Trunked Group -10
41	220.2025	Trunked Group -11
42	220.2075	Trunked Group -12
43	220.2125	Trunked Group -13
44	220.2175	Trunked Group -14
45	220.2225	Trunked Group -15
46	220.2275	Trunked Group -16
47	220.2325	Trunked Group -17
48	220.2375	Trunked Group -18
49	220.2425	Trunked Group -19
50	220.2475	Trunked Group -20
51	220.2525	**********
52	220.2575	
53	220.2625	
54	220.2675	
55	220.2725	Nationwide
56	220.2775	NonCommercial
57	220.2825	10 Channel Block
58	220.2875	
59	220.2925	
60	220.2975	**********
61	220.3025	Trunked Group -1
62	220.3075	Trunked Group -2
63	220.3125	Trunked Group -3
64	220.3175	Trunked Group -4
65	220.3225	Trunked Group -5
66	220.3275	Trunked Group -6
67	220.3325	Trunked Group -7
68	220.3375	Trunked Group -8
69	220.3425	Trunked Group -9
70	220.3475	Trunked Group -10
71	220.3525	Trunked Group -11
72	220.3575	Trunked Group -12
73	220.3625	Trunked Group -13
74	220.3675	Trunked Group -14
75	220.3725	Trunked Group -15
76	220.3775	Trunked Group -16
77	220.3825	Trunked Group -17
78	220.3875	Trunked Group -18
79	220.3925	Trunked Group -19
80	220.3975	Trunked Group -20
81	220.4025	**********
82	220.4075	Nationwide
83	220.4125	NonCommercial
84	220.4175	5 Channel Block
85	220.4225	**********
86	220.4275	**********
87	220.4325	Nationwide
88	220.4375	NonCommercial
89	220.4425	5 Channel Block
90	220.4475	**********
91	220.4525	Trunked Group -1
92	220.4575	Trunked Group -2
93	220.4625	Trunked Group -3
94	220.4675	Trunked Group -4
95	220.4725	Trunked Group -5
96	220.4775	Trunked Group -6
97	220.4825	Trunked Group -7
98	220.4875	Trunked Group -8
99	220.4925	Trunked Group -9
100	220.4975	Trunked Group -10
101	220.5025	Trunked Group -11
102	220.5075	Trunked Group -12
103	220.5125	Trunked Group -13
104	220.5175	Trunked Group -14
105	220.5225	Trunked Group -15
106	220.5275	Trunked Group -16
107	220.5325	Trunked Group -17
108	220.5375	Trunked Group -18
109	220.5425	Trunked Group -19
110	220.5475	Trunked Group -20
111	220.5525	**********
112	220.5575	Government Nationwide
113	220.5625	5 Channel Block
114	220.5675	
115	220.5725	**********
116	220.5775	**********
117	220.5825	Government Nationwide
118	220.5875	5 Channel Block
119	220.5925	
120	220.5975	**********
121	220.6025	Trunked Group -1
122	220.6075	Trunked Group -2
123	220.6125	Trunked Group -3
124	220.6175	Trunked Group -4
125	220.6225	Trunked Group -5
126	220.6275	Trunked Group -6
127	220.6325	Trunked Group -7
128	220.6375	Trunked Group -8
129	220.6425	Trunked Group -9
130	220.6475	Trunked Group -10
131	220.6525	Trunked Group -11
132	220.6575	Trunked Group -12
133	220.6625	Trunked Group -13
134	220.6675	Trunked Group -14
135	220.6725	Trunked Group -15
136	220.6775	Trunked Group -16
137	220.6825	Trunked Group -17
138	220.6875	Trunked Group -18
139	220.6925	Trunked Group -19
140	220.6975	Trunked Group -20
141	220.7025	**********
142	220.7075	
143	220.7125	Nationwide
144	220.7175	NonCommercial
145	220.7225	10 Channel Block
146	220.7275	
147	220.7325	
148	220.7375	
149	220.7425	
150	220.7475	**********
151	220.7525	**********
152	220.7575	Nationwide Commercial
153	220.7625	Private Carriers
154	220.7675	5 Channel Block
155	220.7725	**********
156	220.7775	**********
157	220.7825	Nationwide Commercial
158	220.7875	Private Carriers
159	220.7925	5 Channel Block
160	220.7975	**********
161	220.8025	**********
162	220.8075	Public Safety
163	220.8125	Portable Mobile
164	220.8175	Immediate
165	220.8225	Safety of Life
166	220.8275	Interoperability
167	220.8325	Mutual Aid
168	220.8375	
169	220.8425	
170	220.8475	**********
171	220.8525	**********
172	220.8575	Government
173	220.8625	and
174	220.8675	NonGovernment
175	220.8725	
176	220.8775	
177	220.8825	
178	220.8875	
179	220.8925	
180	220.8975	**********
181	220.9025	**********
182	220.9075	NEW EMERGENCY
183	220.9125	MEDICAL SERVICE
184	220.9175	
185	220.9225	**********
186	220.9275	**********
187	220.9325	Data Only
188	220.9375	
189	220.9425	
190	220.9475	
191	220.9525	
192	220.9575	
193	220.9625	
194	220.9675	
195	220.9725	**********
196	220.9775	**********
197	220.9825	Data Only
198	220.9875	Reserved Indefinately
199	220.9925	
200	220.9975	**********

On Patrol with the San Diego County Sheriff's Department

When Agoston Haraszthy first pinned on the star of the San Diego County Sheriff in 1850, his jurisdiction was a one-horse, dusty border county in Southern California. He kept the peace amid the gunfights and the sound of pounding horses hooves in a west that was still very wild. His prisoners were cattle rustlers, drunks, and thieves. If he could have taken a moment to look beyond his boots, out into a future one-hundred-forty-three years away, he would have been amazed at the territory his department would one day encompass, the criminals they would chase, the

Silver Stars

BY LAURA QUARANTIELLO

firepower they would encounter as the third largest Sheriff's Department in the nation. He would have gawked at the helicopters, motorcycles, and off-road vehicles that replaced the horses of his time. Perhaps the only thing that Sheriff Haraszthy would recognize of his beat in the future would be the bad guys. Dusty one-horse town or four thousand square mile county, the bad guys will always be bad guys and the law will always be the only line of protection.

The Beat

San Diego County covers an area of 4,255 square miles on the deep south end of Southern California. 3,800 of those square miles is the primary service area of the Sheriff's Department. More than 700,000 residents are assisted from eighteen separate substations located at San Marcos, Vista, Julian, Poway, Ramona, Alpine, Borrego, Encinitas, Fallbrook, Ranchita, Valley Center, Santee, Lemon Grove, and Warner Springs, to name a few. Their service area runs the gamut from sandy sun-washed beaches on the coast, to rural valleys and sharp mountains inland, on down to the merciless desert. Deputies work urban city, suburban town and rural back country beats, all within the confines of the same county. In some of its fifty-two separate contract communities, four wheel drive vehicles, motorcycles and helicopters bring law enforcement in that would otherwise not exist.

The Deputies

Deputy Sheriff's undergo eighteen weeks of intensive training at the San Diego Sheriff's Academy located on the campus of Southwestern University in Chula Vista, California. Additional training is available from the Department's board certified Correctional Academy. This training prepares them for assignments with patrol, detentions, arson, fraud, narcotics, homicide, juvenile services, vice, the K-9 unit and ASTREA air support. Deputies serve an eight hour shift, with reserve deputies serving 24 to 32 hours per month. The Department's Correctional Deputies are charged with overseeing six detention facilities within the county, processing more than 150,000 arrests per year and caring for 4,500 inmates in one of the largest jail systems in the United States.

Primary front-line vehicles. Photo by L. Quarantiello

The Equipment

The primary front-line vehicles for the Department are the Ford Crown Victoria Limited, Chevrolet Caprice and Ford Taurus marked units, the newer vehicles painted black and white with gold door emblems. Some older vehicles are still on the job bearing green and white and all-white colors with a green Sheriff's emblem appearing on the front doors. These are hold-overs from the days of the last Sheriff, whose radical paint-job made his deputies highly visible. Motorcycle units utilize the Kawasaki Police 1000 for motor patrol duties. A

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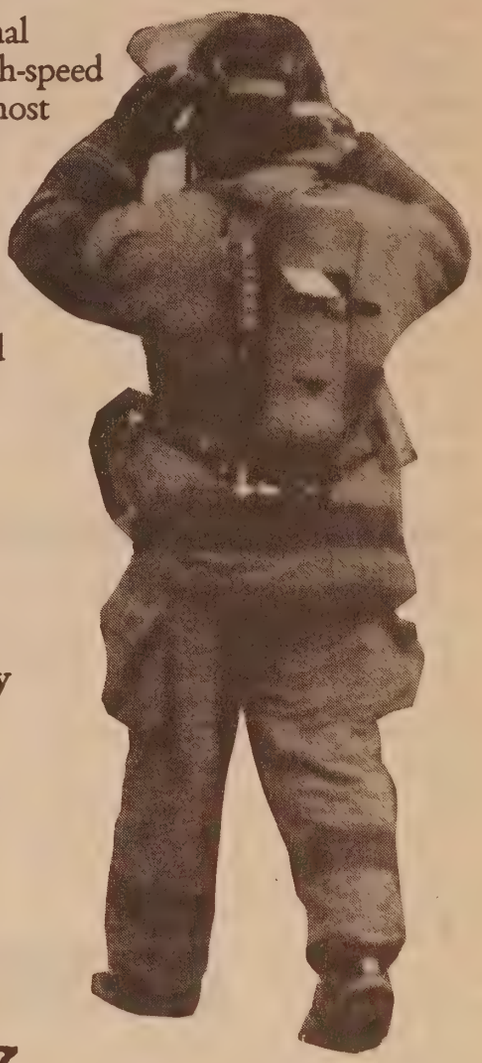

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wide variety of jeeps, trucks and off-road vehicles are included in the Department's stable, many belonging to the Sheriff's Search and Rescue Unit.

The Department also maintains a Command Communications Van which from the outside appears to be an innocent-looking bus. The inside, however, marks it as a field office of the Sheriff's Department with scanners, VHF/UHF radios and even an aircraft radio outfitting the pane. One deputy described the van to me as "capable of communicating with just about every law enforcement agency in the state." This mobile command center sees service in a multitude of situations, from fires, major incidents, and SWAT engagements to search and rescue duties.

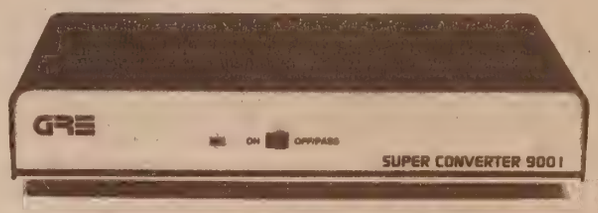
Six helicopters assist in law enforcement from the sky as part of the ASTREA (Aerial Support To Regional Enforcement Agenies) division. Two-seat Bell 47Gs were the mainstay of the fleet until the Department purchased new McDonnell Douglas 500Ds, a favorite mount of police departments due to their generous speed, maneuverability and ease of maintenance. Two Bell UH-1H Hueys have been added for heavy rescue and Special Enforcement Detail (SED--Sheriff's SWAT) transport.

The crew consists of one pilot and one observer. The pilot, a deputy sheriff holding a commercial pilot's license, two years patrol experience and two hundred or more rotary wing flight hours, has responsibility for flight operations. The observer, a deputy sheriff with two years of patrol experience, maintains tactical control of the flight.

The newly formed Off-Road Enforcement Team (ORET) now enables deputies better entry to the county's rural areas. Composed of Reserve Deputies aboard motorcycle units, ORET works to eliminate illegal dumping activities, illegal shooting, off-road driving

Your Scanner Can Now Pick Up Cellular and Other 800 MHz Frequencies!

Don't dump your existing scanner because it doesn't receive those exciting 800 MHz communications you want to hear so badly. Let the new Super Converters do the job for you. These converters receive all frequencies from 810 to 912 MHz, then convert them down to 410 to 512 MHz so they can be monitored on most standard scanners. So, if you want to monitor 875.25 MHz, a Super Converter will change it to 475.25, subtracting 400 MHz from the 800 MHz frequency without any distortion. (Your scanner must receive 410 -- 550 MHz to work. Check your owner's manual.) Works when scanner is in manual, scan and search modes. Connects in seconds without tools to your scanner's antenna connector, no internal connections. There's two convenient modes:



Super Converter 9001 (for base station use) has a 12" BNC to Motorola plug adaptor. Operates from a 9V battery (not included) or a 9VDC power supply. Comes with complete instructions and a 120-day limited warranty.

The Super Converter II (for handheld use) is equipped with BNC connectors and fits right between the scanner and its antenna. Also operates on 9v battery. Comes with 120-day limited warranty.

Both units can be left in-line all the time. When power is off, scanner returns to normal 400 MHz operation and converter is by-passed. An LED indicator lights when unit is on.

The Super Converter 9001 sells for $99.95 and is shipped fully insured by UPS. The Super Converter II sells for $94.95 and ships by UPS.

Buy now before they can't be had. Federal law will soon prohibit the sale of this equipment. (For this reason, returns will not be accepted.) So order early. Send your check, money order or VISA/Mastercard to:

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It is illegal under federal law to monitor cellular phone calls.

Arson/explosives unit, left. Dispatcher, below. Courtesy San Diego Sheriff's Department

and riding in the hills and back country areas not accessible to a four-wheeled patrol unit.

Communications

The San Diego Sheriff's Deartment utilizes Motorola radios in all of their units. This equipment operates on fifteen primary frequencies within the 453 megahertz range. Additionally, units are capable of transmitting on 154.920 (California Law Enforcement Mutual Aid Radio System--CLEMARS), 155.475 (National Law Enforcement Mutual Aid Radio System--NLEMARS) and 460.025 (Statewide UHF Gold) frequencies.

Dispatching from the County Operations Center in Kearney Mesa, California (KNCJ 664) is performed on five frequencies covering the Coast, North Inland, South, East and Central portions of the county. One Car-to-Car channel is used for inter- deputy communications with two tactical channels employed for the Special Enforcement Detail and detective and narcotics operations. Frequency Four is utilized for administrative communications and any information not pertinent to a dispatch channel. Two low band repeater frequencies see service as back country relays, getting communications to deputies in the rugged terrain.

Sheriff's Communications Dispatchers Grade I earn an annual salary of $18,387 to $22,339. The County of San Diego describes the dispatcher's job as "working in a fast paced environment answering high volume 911 emergency and routine calls from the public, requesting information or reporting criminal activities, fires and emergency medical problems. Information received is evaluated and documented using standard police codes or plain language, as appropriate. Dispatchers must monitor radio traffic, despite considerable background noise... document facts...interpret maps accurately. The dispatcher operates computer terminals to assist in processing calls for service and to query criminal justice and Department of Motor Vehicle data bases" as well as to keep track of calls and units in the field. Frequencies are often "patched" when not enough dispatchers are on-duty to staff all positions. It is a common scenario in a budget-crunched department.

Law Enforcement in the Twentieth Century

Just as the Sheriff's Department's transportation needs have moved from horses to motorized vehicles, so too has the pen and paper given way to the computer. In what is hoped to become a Department-wide move, the City of San Marcos has purchased lap top computers for the deputies assigned to that city, trimming report writing by one-third and enabling the deputies to spend more time patrolling the beat.

In the future, the Sheriff's Department will be connecting all Department of Motor Vehicle and name checks with a computer aided dispatch (CAD) system, and deputies in the field will be sending arrest and crime reports directly from unit-mounted computers to a main frame at headquarters. 800 MHz radios are a possibility also, as the 453 megahertz band is becoming crowded with transmissions, interfering at times with the link between deputy and dispatcher.

The seven pointed star of the San Diego County Sheriff's Department is fast

growing prominent within the county as more deputies and patrol units are added in an ever-increasing effort to fight crime. Deputies devoted to gang and narcotics enforcement are available at each substation, K-9 units work the streets and community-oriented policing allows deputies to work specific beats in an attempt to get closer to the public they serve. One contract city has supplied their C.O.P. units with cellular telephones. The number has been distributed citywide and residents are encouraged to use it for non-emergency calls. This is not conventional policing, it is a new kind of pro-active attempt at blasting the spiraling rocket of community crime.

Sheriff Haraszthy's Wild West is kept in check by a dedicated force of law enforcement professionals whose silver stars can be heard on the radio every day, doing what they do best, protecting and serving.

TUNE IN ON TELEPHONE CALLS by Tom Kneitel

People will talk about almost anything when they're on the phone – and not have the foggiest notion that people are listening. And people are listening – if they have a scanner.

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SAN DIEGO COUNTY SHERIFF'S DEPARTMENT
COMMUNICATIONS SYSTEM
Radio Call: "Station M"

F-1 Car to Car/Inter-Deputy Comms–453.725 M
F-2 North Coast Dispatch–453.750 R
F-3 North Inland Dispatch–453.925 R
F-4 East/Desert Dispatch–453.500 R
F-5 South/Central Dispatch–453.950 R
F-6 Administration–453.400 R
F-7 Inquiry–453.575 R
F-8 Central Dispatch–453.100 R
F-9 North Tactical–453.425 M
F-10 South Tactical–453.825 R
F-11 North Tactical Simplex–453.425 M
F-12 South Tactical Simplex–453.825 M
Special Enforcement Detail–453.250 R
Detectives/SED– 453.975 M
Detectives/SED–453.875 M
Law Enforcement Intersystem–453.675 R
CLEMARS UHF–460.025 M
CLEMARS VHF–154.920 M
NLEMARS–155.475 M
Blue Mutual Aid– 153.995 M
Low Band Repeater–45.940 R
Low Band Repeater– 45.780 R
Central Detentions–453.625 M
El Cajon Detentions–453.700 M
South Bay Detentions–453.275 M
Vista Detentions–453.325 M

SDSO UNIT ID SYSTEM:

10 - San Diego
20 - Coast Cities
21 - Del Mar
23 - Solana Beach
25 - Encinitas
30 - Vista
31 - Vista
32 - Fallbrook
35 - San Marcos
36 - Escondido
40 - Poway
41 - Poway
44 - Ramona
45 - Harbison Canyon
50 - El Cajon, Lakeside
51 - Santee
52 - Alpine, Crest
60 - Bonita, Lemon Grove, Spring Vly.
61 - Lemon Grove
70 - Chula Vista, Otay
71 - Imperial Beach
80 - Pauma Valley, Valley Center
82 - Anza Borrego Desert, Julian, W.S.
84 - Mountain Empire Dist., Pine Vly.
86 - Campo, Tecate
90 - Radio Training

A - Academy
B - Personnel
C - Communications
D - Detentions
E - Special Enforcement
F - Fraud
G - IAD
H - Homocide
I - Investigator
J - Juvenile
K - K-9 Unit
L - Lab
M - Motors
N - Narcotics
O - Coroner/Special Investigations
P - Patrol
R - Resident Deputy
S - Sergeant/Patrol Supervisor
T - Traffic
V - Vice
W - Transportation
X - Bomb/Arson Unit
Z - Reserve Deputy

Fourth Digit defines deputy rank
C - Captain S - Sergeant L - Lieutenant

Fifth Digit defines shift
A - Day B - Swing C - Night

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Robert A. Coburn, W1JJO EDITOR

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- Forestry Service Conservation
- Amateur Radio
- Business Radio Service
- 800 MHz Business
- Notification Systems
- Experimental
- Cordless Phones
- Highway
- National Weather Service
- Hospitals
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- Marine Radio Service
- Power Companies
- General Mobile Radio Service
- Ski Patrols

The frequencies are listed by community and include a master cross reference by frequency, call sign and license.

Included in the new editions are PL-Tones, new Aeronautical and Railroad Phone Channels, state, county, and local system descriptions, system maps, frequency allocation tables, and explanatory notes on specific frequency usage. Maritime information has been expanded to include high frequency licenses, and specific cellular site licenses are included.

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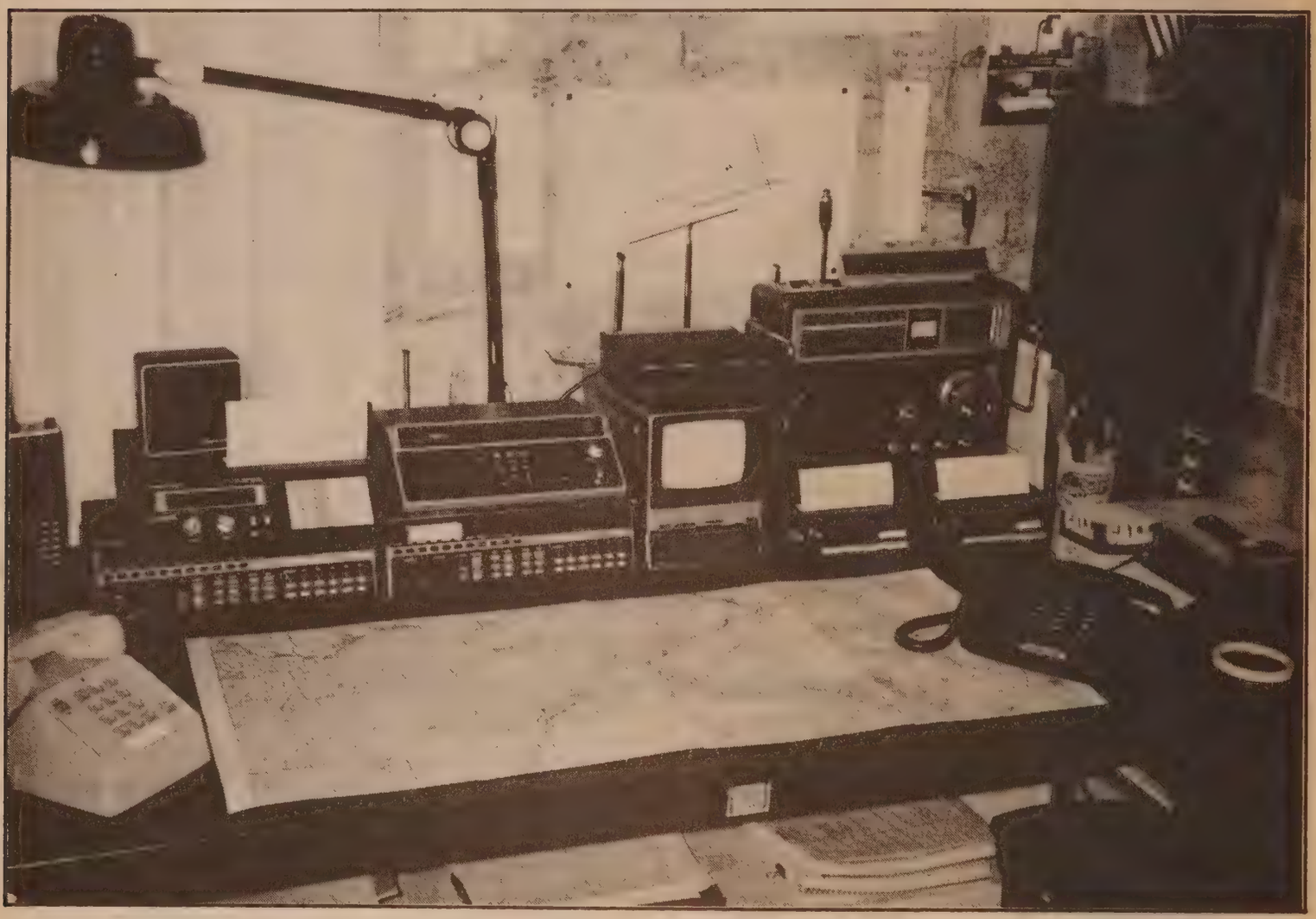
Using Multiple Scanners

Some Tips from Les Mattson



Pictured above, the author's listening post. Says Les, " I still use ALL these scanners, every one is operable, even the old BC III."

Don't throw away that obsolete scanner, use it for multiple scanner use. That's right, even your old-fashioned crystal sets are worth saving. Six, 10-channel scanners are often more valuable as sources of information then is one 400-channel set.

Suppose you are monitoring your 400-channel scanner one evening and you hear of a serious industrial fire in your area. You lock-on some appropriate banks of your 400-channel scanner and lock-out some other, inappropriate banks. Your scanner scans various banks, including your local fire frequencies, of course. All the while it is scanning your local fire frequencies, you are also hearing messages about fires elsewhere in your area. Sometimes it gets difficult to tell whether what you are hearing refers to your local fire, or whether it is about some other fire altogether. Your first reaction might be to lock-on the frequency covering your local industrial fire traffic to the exclusion of all others, but then you would hear no other public safety agencies responding

to the same fire.

Your 400-channel scanner is being used mainly to monitor your local fire scene, but you probably would also like to listen to the local police. Perhaps you even know the frequency used by the industry that is having the fire and you would like to tune that in as well. Nowadays, major industrial fires could bring additional units from the closest Haz-Mat team, state environmental protection agencies, outside fire units for air cascade use, area fire companies with larger diameter fire hoses, water tankers, food canteens, cover assignments and other fire support groups you might want to monitor.

In the normal expectation of injuries, you would want to monitor your ambulance and hospital frequencies, med-channels, paramedics, air evacuation helicopters, air-to-air frequencies, etc.

Radio and TV news reporters, with or without their helicopters, often report live from serious fire scenes and monitoring them would give you much valuable information about the fire and the overall situation. It is a good idea to have a small, B&W TV in your shack to view these news reports, live. Many 5 in. TV sets can be battery powered, as well as AC powered, and are an ideal accessory in a complete communications set-up, especially when your electric power goes off during a storm.

Don't overlook your old CB radio, probably sitting in a closet somewhere. Truckers coming out of the industrial fire scene would be radioing their good buddies of the fire, how much of a delay to expect in getting loaded and/or unloaded, how serious the fire seems and other good, inside information. Get that CB cleaned off and plugged in. Some scanners are built to receive CB and would be an asset, especially if you do not have a CB transceiver. The CB trucker's frequency is 27.185, Channel 19, which would be the best of the CB's to monitor.

Another, often neglected information source during emergencies, especially weather-related ones, is the 2-Meter Amateur repeaters, in-and-around the 145 to 147 MHz range. Most scanners can be programmed to these frequencies.

Public safety agencies, added to the news media, trauma helicopters, truckers, amateurs and others would require a great many frequencies to monitor. When your single 400- channel scanner stops on the police frequency of your town or city, you are missing conversations on the fire frequencies. And, when your scanner jumps to the fire frequencies, you are missing the report from the news reporters.

For experienced hobbyists, one scanner just doesn't get the job done, regardless of whether the scanner has ten channels or one-thousand channels. As long as it scans, continually moving off one frequency and over to another, you are sure to miss some important details. To learn what is going on during a major emergency or during a presidential or other VIP visit in your area, or in a major winter storm or during an unexpected summer tornado, you need to use as many scanners as possible.

By having say, six scanners, even some with crystals, you have a better chance of hearing most of the important details. The secret is to lock-on one channel for your fireground frequency in one scanner. Another scanner would be locked-on to the industry frequency, if you know it. Still a third might be used to monitor the TV reporters. A fourth, perhaps, would be locked-on to your ambulance frequency. How about a fifth scanner being locked on to a state environmental protection agency? Finally, your best scanner, hooked up to your best outdoor antenna, would be in the scanning mode, instead of being locked on. It would be scanning all these frequencies we have mentioned, plus any others that you feel might be useful.

This method of multiple scanning is the preferred way of monitoring any very important or very large-scale emergency. It is

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suggested that you adjust the volume of one scanner, with the frequency you most want to hear, to a higher volume than the rest of your scanners. Many experienced scanner hobbyists use external speakers located in different positions so they can determine which scanner is active. Otherwise it gets pretty hectic trying to figure out which scanner the sound is coming from. The left-hand scanner would have the sound coming from the external speaker located on the left side of the monitoring desk, or on the left wall, or even on the floor to the left of the desk.

Where do you get five extra scanners?

Where do you get these five or six extra scanners? Mainly, as you upgrade to a newer model, you keep the older one. In most cases, your used scanner is worth much more to you than to anyone else. So, keep it rather than selling it or using it as a trade-in. Base sets in particular, should last you eight to ten years with normal use and care. Mobiles and portables might not be expected to last quite that long, but each is worth keeping.

Keep in mind that your hand-held scanners can be included in this count as can your mobile scanner. In a major snow storm or summer tornado, or a major industrial fire, all of long-term duration, it would make sense to take that mobile unit out of the vehicle and use it with an AC adapter in your shack as an extra, temporary scanner.

Don't overlook the fact that your Tone Finder, if you have one, is matched with an inexpensive Bearcat scanner, the scanner part of which can still be considered a scanner and used as such, locked-on to one of your important frequencies. A friend or a neighbor might be talked into loaning you his scanner or scanners, particularly if he has to be at work during the emergency, where he couldn't use his scanner anyway.

If you still have a crystal scanner in working order, with useful crystals in it, dust it off a bit and include it in your shack. Use it by locking on one of the crystal frequencies when the appropriate emergency arises. Watch for bargains in crystal and programmable scanners at flea markets. Pickup a new 10 or 16-channel scanner when your local Radio Shack dealer has a real "blow-out" sale price. Just use it to lock-on one frequency that suits the particular emergency that you wish to monitor.

Watch the pages of communications magazines and newsletters for used equipment. In most cases, the seller will be forthright about the condition of his used scanner. After all, he doesn't want to be embarrassed later in the same pages of the communications publication as a "rip-off" artist.

Scanners, old and new, should be flat across the top for safe stacking. Usually, you can get stacks of three high on a table or shelf. The top-most scanner need not be flat as nothing else will be stacked on top of it. Be sure all scanners are arranged so you have good visibility of the display area and that they are close enough to you for comfortable reach of all the knobs and controls.

Be advised that some scanners interfere with other scanners. One of the most prone to that, perhaps, was the Bearcat 210 programmable scanner (NOT the more modern Bearcat 210XLT.) The BC-210 was one of the earliest programmable scanners on the market and whenever it was "on", it would "lock-up" all the other scanners that were "on" in the same room. Monitoring would come to a complete standstill. Believe it or not, many of these early models are still in use. In most cases today, scanners can be used in the same room with little difficulty.

If you want to increase your enjoyment of the hobby of scanning, consider some of the many tips presented here for multiple scanning. They've served me well.

Les Mattson is the author of the newly published reference, "Les Mattson's Dictionary of Scanner Terms, Slang and Abbreviations.

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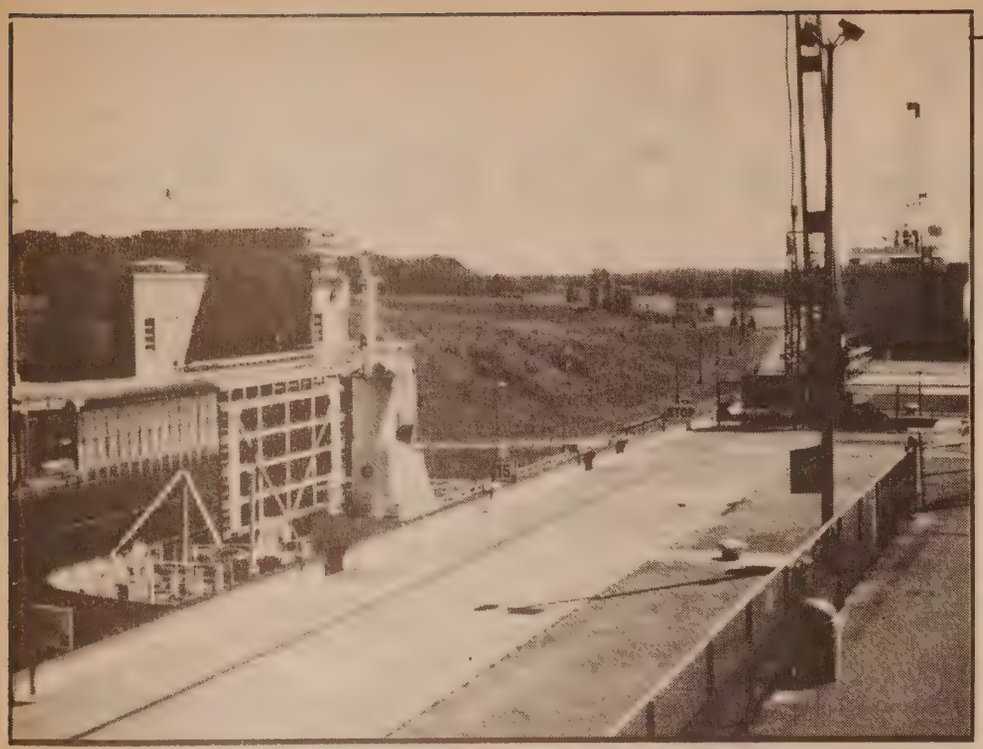

Up the Saint Lawrence

by Everett L. Slosman

"Notice to shipping Charlie two-one-four-zero. St. Lawrence Seaway. Brockville Narrows. Chart number one-four-one-eight and one-four-seven-six-five. Light number one- five-zero and light number three-three-eight are temporarily discontinued due to reconstruction. Mariners are requested to exercise caution transiting area." Canadian Coast Guard 161.650.

The St. Lawrence River acts as the midwest's gateway to the Atlantic Ocean and as an explorer's road to the North American interior. It runs northeast draining Lake Ontario into the Gulf of St. Lawrence to Lake Ontario, serving as economic glue for New York, Ontario, and Quebec.

For 190 miles, the St. Lawrence Seaway turns a difficult-to-navigate water course into a free-flowing commercial highway; from Tibbetts Point, New York to the Port of Montreal. Technically, it also includes Lake Ontario to the Welland Canal and many consider the entire 1190 miles to the sea as the real Seaway.

The St Lawrence Seaway generates annual revenues of $1.9 billion, $90 million in taxes, and 44,628 jobs. It stimulates a huge tourist industry, opening the area to vacationers from several states and the two provinces. For many, the river is a second home.

As early as 1892, Minnesota Congressman John Lind proposed the St Lawrence as a deep water link between the Great Lakes and the Atlantic. Three years later a joint US-Canadian investigative team reported it was feasible to use the St. Lawrence as the primary channel.

However, Congress did nothing until 1954 when Canada created its own seaway authority, threatening to go it alone, and keeping all the tolls. The potential loss of a new revenue stream kick-started Congress and they hurried passed the Wiley- Dondero Seaway Act. Construction began the following January and the Seaway opened to shipping April 25, 1959.

"Notice to shipping Charlie two-one-two-two. St Lawrence Seaway Cornwall Island. Red spar buoy two-alpha reported partially submerged. Mariners are advised to use caution in area." Canadian Coast Guard 161.650.

This article scans the upbound river from Montreal's Jacques Cartier Bridge to Traffic Control Sector 4 off Wolfe Island near Cape Vincent, New York; through the Lachine Rapids, Lake St. Louis, Soulanges, Lake St. Francis, Lake St. Lawrence, International Rapids, Thousand Islands and into Lake Ontario. Scanning from the Port of Montreal to the Gulf and from Wolfe Island to the Welland Canal will be the subjects of future articles.

"Captain, you are twenty-six three forward, twenty-six four aft and twenty-six three midships." Lockmaster to Captain of the Saskatchewan Pioneer at Eisenhower Lock. 156.650.

Ocean-going vessels, called "salties", and bulk cargo ships, known as "lakers", form an almost never ending parade through the 27 foot channels from late-March early-April to late-December.

Sixteen canal locks raise and

lower these vessels to the height of a 60 story building. Watching a 220 meter long ship slip through the Eisenhower Lock compares only with a west-bound laker making 8.5 knots 50 meters off Wellsley Island. Talk about adrenaline flow.

Locking-thru is a popular spectator sport, so the St. Lawrence Seaway Development Corporation operates a tourist center at Eisenhower Lock, Massena, New York. They also maintain a 24 hour call-in system (315-769-2422) so canal buffs can hear a list of vessels, destinations, homeports, and ETA at Eisenhower.

For 25 cents admission to a double-decked platform, visitors have a spectacular view of a ship locking-thru. The lock-level and elevated north side viewing areas are free and easily accommodate wheelchairs. Rest rooms, picnic tables, a weekend snack bar, and ample parking make a visit enjoyable. Many cottages and summer homes sport VHF/UHF antennas and scanning is prevalent. However, the antediluvian New York legislature made portable scanning illegal except in special cases. Therefore, *National Scanning Report* does not recommend hooking your PRO-43 to a car CB antenna to catch the action.

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"Calling the 'Weekend Warrior', 'Weekend Warrior', 'Weekend Warrior'. This is Coast Guard Station Cape Vincent calling." Channel 16 156.800.

Recreational boating and fishing keep the VHF marine channels hot during daylight hours and Canadian and US Coast Guard stations are busy. Channel 9 (marinas & resorts) carries heavy where-are-the-fish traffic and 156.450 is more important than a good northern pike plug.

Late in the day and on weekends the action moves to the public safety channels as the summer people act like fractious tourists. Non-stop police, fire, and ambulance runs handle everything from barroom disputes to quayside fires.

"This is Uncle Sam Tours to Alexandria Bay base. I'm off Bridgestone Island with a medical emergency on board. Please have an ambulance standing by. ETA 12 minutes." 156.350.

Casual tourists love the narrated Thousand Island boat rides and support these two hour trips by spending discretionary dollars. Marine radio equipped boats leave from Gananoque (ON), Cape Vincent (NY), and Alexandria Bay (NY) on regular schedules and 156.350 puts you in the wheelhouse.

"Notice to shipping Charlie one-niner-three-five. Transiting waterway Frankfort. Diving operations taking place daily until one-zero July inclusive. Diving area marked with yellow cautionary buoy and a diving vessel will be present intermittently." Canadian Coast Guard 156.950

Lakers and salties maintain radio watches and follow specific Notice of Arrival orders in the four St. Lawrence River and three Lake

Ontario Traffic Control Sectors.

By using marine channels 11, 12, 13, 14, and 16 in distress, call in, watch, and work patterns based on location, the Seaway authorities avoid serious interference problems. Traffic content is strictly controlled and ships report to Vessel Traffic Control as they enter and leave each sector. Sector patterns for upbound and downbound ships are shown in Tables 1 through 4. Readers can use these and a Seaway map to do some serious scanning; pinpointing vessel locations, headings, and sailing orders.

"Securite. Safety Notice to Shipping Charlie two-one-six-one. St Lawrence Seaway to Lake St. Francis one-four-one-two. Due to the great number of vessels transiting during nighttime at very high and without navigation lights, it is recommended that yachting be avoided in this section between sunset and sunrise. The situation is considered dangerous." 161.850.

Canadian Coast Guard stations VDQ and VDQ3 operate continuously on 161.650 transmitting Notices to Mariners and Notices to Shipping. These same two stations are also found on Channel 25B, 161.850. French is heard on some Canadian channels. However, the transmitters may be in Ontario instead of Quebec.

The Saint Lawrence Seaway Development Corporation (Box 520, Massena, NY 13662) publishes a three ring binder containing the Seaway Regulations and a map of the river Traffic Control Sectors. Serious hobbyists will find this a valuable.

RAM-ROM Press (Box 10695, Bedford, NH 03110) offers a twenty-five page list of VHF Seaway and community frequencies including aero, railroad, fire, police, ambulance, municipal and marine listings. Prepaid price, including shipping, is $5.95.

A trip to the St. Lawrence Seaway can be an great vacation and a memorable scanning exerience.

TABLE 1–Traffic Control Sector 1, Seaway Beauharnois
VDX20 Vessels check in, work, and watch on Channel 14, 156.700. Upbound Check-in Points: CIP2: Vessel Name, Location, Destination, Fore & Aft Draft, Cargo and Manifested Dangerous Cargo, Pilot requirements for Lake Ontario or Upper Beauharnois Lock (Inland Vessels only). CIP3: Vessel Name, Location. Exiting Upper Beauharnois Lock: Vessel Name, Location, ETA CIP7, Confirm pilot requirements for Snell Lock (Inland Vessels only). CIP7, Leaving Sector 1: Vessel Name, Location. Downbound Check-in-Points: CIP6 Entering Sector 1: Vessel Name, Location. CIP5:Vessel Name, Location. Exiting Lower Beauharnois Lock:Vessel Name, Location, Confirm harbor or river pilot requirements St. Lambert, Montreal Harbor Berth number if applicable. St Nicholas Island: Vessel Name, Location. Exiting St. Lambert's Lock to CIP2: Vessel Name, Location.

TABLE 2–Traffic Control Sector 2, Seaway Eisenhower
KEF Vessels check in, work, and watch on Channel 12 156.600. Upbound Check-in-Points: CIP7 Entering Sector 2: Vessel Name, Location, Destination, Fore & Aft Draft, Cargo, ETA Snell Lock. CIP8: Vessel Name, Location. CIP8A: Vessel Name, Location. Exiting Eisenhower Lock: Vessel Name, Call Sign, Location, ETA CIP11, Confirm Pilot requirement–Lake Ontario, First US port of call, ETA first US port of call. CIP11 Leaving Sector 2: Vessel Name, Location. Downbound Check-in-Points: CIP10: Vessel Name, Location. CIP9: Vessel Name, Location, ETA Snell Lock. Exiting Snell Lock: Vessel Name, Location, ETA CIP6. Buoy Delta 47 Lake St. Francis: Vessel Name, Location, Confirm pilot requirements Upper Beauharnois Lock (Inland Vessels only). Exiting CIP6: Vessel Name, Location.

TABLE 3–Traffic Control Sector 3, Seaway Iroquois
VDX 2. Vessels check in, work, and watch Channel 11, 156.550. Upbound Check-in-Points: CIP11 Entering Sector 3: Vessel Name, Location. CIP12: Vessel Name, Location. Exiting Iroquois Lock: Vessel Name, Location, ETA Crossover Island. Crossover Island Leaving Sector 3: Vessel Name, Location. Downbound Check-in-Points: Crossover Island Entering Sector 3: Vessel Name, Location, Destination, Fore & Aft Drafts, Cargo. CIP 14: Vessel Name, Location. CIP 13: Vessel Name, Location. Exiting Iroquois Lock: Vessel Name, Location, ETA CIP 10, Harbor or river pilot requirements St. Lambert, Confirm pilot requirements Snell Lock (Inland Vessels only). CIP 10 Leaving Sector 3: Vessel Name, Location

TABLE 4–Traffic Control Sector 4, Seaway Clayton
WAG Vessels check in, work, and watch on Channel 13, 156.650. Upbound Check-in-Points: Crossover Island Entering Sector 4: Vessel Name, Location, ETA Cape Vincent or river port, Confirm pilot requirements Lake Ontario. Wolfe Island Cut (Beauvais Point) for vessels leaving main channel: Vessel Name, Location, ETA Kingston. Downbound Check-in-Points: Cape Vincent: Vessel Name, Location, ETA Crossover Island or river port. Wolfe Island Cut (Quebec Head) for vessels entering main channel: Vessel Name, Location, ETA Crossover Island or river port. Crossover Island Leaving Sector 4: Vessel Name, Location.

TABLE 5 –Selected Seaway and Marine frequencies

156.350	VCV 948	Gananoque Boat Line, LTD.
156.450	VCX21	ST Lawrence Seaway Development Authority.
156.500	Chan 10	Seaway (CANADA) for calling Montreal Vessel Traffic Management Center.
156.550	Chan 11	Seaway (CANADA).
156.600	Chan 12	Seaway (US).
156.650	Chan 13	Seaway (US).
156.700	Chan 14	Seaway (CANADA).
156.800	Chan 16	Seaway calling, emergency, & USCG.
156.950	VDQ/VDQ3	Canadian Coast Guard. Also International, Commercial Intership, and Ship-to-Shore.
157.100	Chan 22A	USCG and maritime safety.
157.175	VDQ/VDQ3	Canadian Coast Guard. Also International Channel 83 with duplex on 156.175 or 161.775.
157.275	VDQ	Canadian Coast Guard. Also Public Correspondance Channel 85 with duplex on 161.875.
157.300	VDQ	Canadian Coast Guard. Also Public CorrespondanceChannel 26 with duplex on 161.900.
161.650	VDQ/VDQ3	Canadian Coast Guard. Also International Channel 21 with duplex on 157.050.
161.775	VDQ3	Canadian Coast Guard. See Channel 83 above.
161.875	VDQ	Canadian Coast Guard. See Channel 85 above.

TABLE 6 Selected Municipal & County Frequencies.

37.940	KFM370	Adams NY Street Dept.,	KIZ248	Alexandria Bay NY Street Dept.
	WNCG507	Antwerp NY Street Dept.,	KNAQ906	Ellisburg NY Street Dept
	KFM365	Henderson NY Street Dept.,	KFM368	Hounsfield NY Street Dept.,
	KNJA515	Lyme NY Street Dept.,	KBX508	Pamelia NY Street Dept.,
	KWH440	Rodman NY Street Dept.,	KFM369	Theresa NY Street Dept.,
	KNEX620	Jefferson County NY Engi,	KEF837	Massena NY Street Dept.,
44.120	XJJ298	Kingston ON Works Dept.,		
45.080	KRF573	Watertown NY Muncipal,		
151.025	KBW60	Watertown NY Street Dept.		
151.115	KVF780	Cornwall NY Municipal		
153.875	KNED365	Lorraine NY Municipal		
	KUZ771	Orleans NY Municipal		
154.100	KMK318	Canton NY Municipal		
154.965	KET279	Cornwall NY Municipal.		
156.075	KNJW673	Alexandria Bay NY Street Dept.		
156.135	WQY611	Philadelphia NY Street Dept.		
158.730	XJG492	Valleyfield ON Municipal.		
158.865	KNFX754	St Lawrence NY County Govt.		
158.895	KNFX754	St Lawrence NY County Government.		
163.290	XJI706	United Counties ON Government.		
164.040	XJI706	United Counties ON Government.		
169.200	XJJ944	Matilda ON Township Road Department.		
453.400	KNIZ437	Canton NY Municipal.		
453.300	WXR293	Ogdensburg NY Housing Authority.		
458.300	KIU491	Watertown NY Housing Athy.,	WXR293	Ogdensburg NY Housing Athy.
458.325	WSL742	Wilma NY Municipal.		
458.400	KNIZ437	Canton NY Municipal.		
39.460	KEC896	Jefferson County NY Sheriff		
42.060	XJB54	Ontario Provincial Police		

Ask The Experts

Q: I have a police frequency which I monitor in my area. Some of their cars talk in the clear, but I receive other cars which come over as static. Is there any way I can program my scanner to receive this traffic?
– Larry Collins
Quincy, Illinois

A: What you're hearing sounds like encrypted tranmissions. Encryption or "scrambling" is used when units have sensitive information to pass along. Supposedly, decoders exist for some types of scrambling. However, unscrambling protected communications is illegal according to the Electronic Communications Privacy Act of 1986.

Q: I have a scanner connected to a roof antenna. I get so much interference that it makes me want to turn the scanner off! What can I do?
– Mike Natter
Plainview, New York

A: Ouch! Sounds bad, Mike. First of all, check for anything in or around your home that could be intefering. Computers, lamps, or other electronic equipment. Turn off anything that might be a culprit and try the scanner again. No luck? The only other pest I can think of is a nearby paging or transmitter station. Take a drive around and see if you have any transmitting antennas in the area. Last test: take your scanner for a ride a few miles from home and try it again. No interference? Your problem is local to your area. Interference? It's the radio. Consider sending it in for servicing.

Q: This is probably the silliest question you'll ever get, but what's the proper way to use the squelch control on my scanner?
– Pete Wagner
South Lake Tahoe, Nevada

A: Questions are only stupid and silly when they go unasked. The squelch knob is perhaps the simplest control on a scanner to use. Turn it clockwise to quiet the rushing static sound and you're in business. Many listeners leave the squelch control parked at one setting and never touch it again. If you're doing this, you might be missing out on transmissions. Weak signals can often be covered by a squelch setting that is too high. This is especially true on the aero bands and while listening to simplex transmissions like police or fire tacticals. At the beginning of each scanning session, rotate your squelch knob completely out, until all you hear is noisy static. Then rotate it clockwise just until quiet prevails. Leave it there, at the lowest possible setting. Raise it as needed to keep the noise away, but always try to maintain squelch at a low setting. You'd be surprised what a difference it makes!

Q: Is is true that all air traffic control communications will soon be going digital?
– Betty Smith
Pelham, New Hampshire

A: Great things are happening in the world of aviation communications. We're already seeing voiceless communications via ACARS (Arinc Communications Addressing and Reporting System) used by airlines for routine operational reports. The availability of the satellite-based Global Positioning System (GPS) will allow precise position reporting and reduced separation for transoceanic flights. A new satcom telephone system with multiple channels will allow two passengers on the same aircraft to make simultaneous phone calls to anywhere in the world. The actual communications will be digitized for transmission from the airplane to the satellite and back to the ground. Future steps are said to include "automatic dependent surveillance position reporting and voiceless communication with air traffic control." I wouldn't look for the demise of ATC communications too soon, but changes are on the horizon. Stay tuned.

Q: What should I do if I hear information about a crime on my scanner?
– Anthony Rizzoli
New York, New York

A: All crime reporting can be done anonymously. Pick up the phone and dial your police department (if it's a crime in progress or other type of emergency, use 9-1-1 or the emergency number. Otherwise use a non-emergency number.) Tell them you have information about a crime and wish to remain anonymous. They'll be more than happy to take down your info and pass it along to patrol officers or detectives. Remember, your details may be vital.

Q: Officers often say "switch to F1, or switch to F2." What are they talking about?
– Dee Kennedy
Chicago, Illinois

A: F1, F2 and all the other F's are frequency designations. It's easier to say "switch to F1" than to say "switch to 460.125." Frequencies used by police and fire may also be labelled with color designations ("switch to Blue") as well. Listen for another frequency to come active with the same officer who requested the switch and write down that channel with its designation.

Q: Honest, I wasn't listening to cellular, but right up above that band are some strange distorted communications. What are they?
– Randy Carlyle
Willow Springs, Missouri

A: Between 894-896 MHz exists the

aircraft side of AirFone air to ground telephones used by the airlines. 849-851 MHz is where the ground side of the conversations hang out, but you'll need to be close to hear these. The mode is AM, with six kilohertz spacing.

Q: I would like to upgrade my scanner. I am interested in purchasing a gapless scanner,but when I wrote to some companies requesting information, I was buried under an avalanche of material I don't understand. For example, is there an advantage to having the shortwave frequencies included in the scanner? What kind of frequencies can you pick up when you go above 1000 MHz?

– James Carlin
Salem, Ohio

A: Well, the first 800 models of the 2500XLT scanner have been shipped to dealers. It's a real nice radio covering 25 MHz to 1.3 GHZ. There are only two sections missing – the celluar telephone band and a small portion of the UHF television broadcast band between 550 MHz and 760 MHz. But as far as two way conversations are concerned, the scanner is continuous.

There is no real advantage to having shortwave (frequencies below 25 MHz) included in a scanner. A scanner is searching for frequencies that are on and off the air in a rapid order, much like police and fire communications. Much of the shortwave band is filled with broadcast stations that stay on the air for hours at a time and would render the scanner ineffective in its scan function.

Currently there is not much radio traffic above 1000 MHz, but scanners like the 2500XLT are including that spectrum for when systems are developed for those bands.

Q: I would like an address to get a catalog for a Bearcat AC adapter scanner.

–John Hill
Nampa, Indiana

A: For AC adaptors for Bearcat Scanners,you may wish to contact the following:

Uniden America Corporation
8707 North By Northeast Blvd.
Indianapolis, IN 46250

Send Your Questions to "Ask the Experts"

Box 360, Wagontown, PA 19376

These folks have the parts department for all Uniden Products including scanners. I do not know if they have a catalog or not, but you can ask.

Q: I recently bought my first Uniden Bearcat scanner model BC 855XLT, And in the manual it states on page 22, that this unit can monitor 470.0125 to 470.2875 and other seven digits frequencies. How can I program my unit with these frequencies or can I?

– James Lewis
Jennings, LA

A: 1. Program in just the first six digits and press enter.

2. Program in all seven digits and press enter.

either way, the scanner will receive the seven digit frequency. It just only displays the first six. New model scanners like the 890 XLT, 2500XLT and 8500 XLT have the capability of showing seven digit frequencies.

Q: I have a Realistic Pro-42, and the range is 30 to 54, 138 to 174 and 380 to 512 MHz. My problem is I can't get the LAX tower, the numbers which is a four digit entry I keep getting a error on my display. My scanner takes a 5,6 and 7 digit entry.

– Norman C. Foster Jr.
Westwood, California

A: As you noted the frequency range for VHF on your scanner is from 138 to 174 MHz. The aircraft band is from 108 to 138.000 MHz. Therefore you are not able to receive LAX tower because your scanner does not cover the frequency range for aircraft.

Q: I have a small problem with my scanner antenna coax. I have a discone about 60 ft high and have been using RG 58. I have changed to RG6U to improve my performance but have not seen any. Total coax run about 80 ft.

– John Cleveland
Ogden, Utah

A: Perhaps you do not have a problem at all, but are simply out of range of the signals you are trying to receive. Normally scanner frequencies can be received on an average of 35 to 50 miles. However, since this is an average there are times that signals can be heard from far greater distances and other times that the signals do not travel as far as what one might expect.

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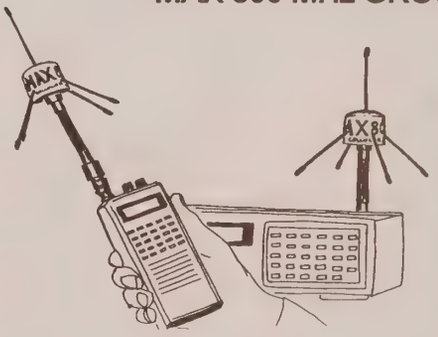

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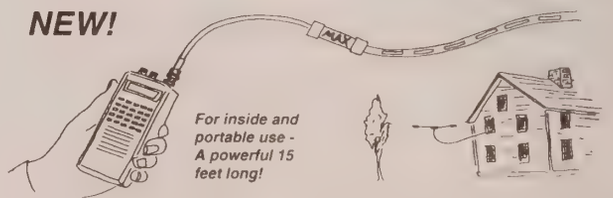

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LETTERS

No Sex Cell Phones in North Dakota

Ed Kensiki (ND 1 CGY) of North Dakota says he's puzzled by all of the reports he sees in National Scanning about monitoring cellular telephones. "Sex, sex, sex. That's sure not what I'm hearing when I listen to cellular phones! Roundabout these parts, you're more likely to hear a farmer out in his field yelling, 'Mother! I need parts!'" It's your own fault, Ed. If North Dakota would bring in more lawyers and stockbrokers, you'd be hearing more cheezy conversations. Just for fun, I did some checking and called CommNet 2000 of Englewood, Colorado. CommNet 2000 is the biggest provider of rural cellular service in the country, serving the Dakotas, Montana, Idaho, Wyoming, Colorado, Utah and Iowa. According to Barbara Sullivan, CommNet's assistant vice president for marketing, about 25 percent of their clientel is farmers. "This is not a new trend," says Sullivan. "[Farmers] have been longtime customers."

Scanning the Roanoke Phantom

J. Howard Eals (VA 3 ERY) of Virginia reports that a phony air traffic controller he has been hearing on his scanner has been captured. Often sounding very much like a real controller, the mysterious "Roanoke Phantom" created heart-stopping confusion by instructing pilots to break off their landings at the last minute, change altitude or change frequencies. "One time I heard him calling, 'Mayday! Mayday! Mayday!,'" said Eals.

Here's some excerpts from J. Howard's logbook:

- August 1--The Phantom invites the crew of a Comair flight to smoke marijuana with him after they land.
- August 15--The Phantom unleashes a string of obscenities on airport personnel.
- August 22--The captain of a commercial aircraft landing at Roanoke was instructed to "break off" landing.
- September 2--A voice issued a mayday saying that an "ultralight [aircraft is] goin' down one zero miles south of Roanoke... Can't stay on the radio..."
- September 4--The Phantom takes on the call sign of Lifeguard Two Lima Gulf, the code name for the rescue helicopter at Roanoke Memorial Hospital. When air traffic controllers respond, the Phantom begins yelling, "April Fool! April Fool!"

After a two-month investigation, FBI agent arrested Rodney Eugene Bocook, 27, and charged him with communicating false information to in-flight aircraft -- charges that could put Bocook behind bars for 22 years and net hime a fine of $500,000. His lawyer immediately sent him for psychiatric evaluation.

UFO Captures Illegal Monitors

In England, it is illegal to use a scanner to monitor police communications. And while the authorities do not often seem to go out of their way to stop the practice, there are exceptions. An anonymous reader passes along this clipping: "A police radio call in Appleton, Cheshire, was designed to shock. The emergency message said a flying saucer had crashed an burned and the area was radioactive. Five civilians who hurried to the scene were arrested and charged with monitoring police communications."

Comments on the New BC890XLT

We got a lot of letters in response to our review of the new Uniden BC890XLT. From your mail, it seems that there's a lot of interest in the radio. Bill Edwards (CA 9 BYL) of Los Angeles, California, wrote to tell us the actual coverage of the radio: 29-54, 108-174, 216-512 and 806-956 MHz. "I am disappointed by the gaps [in frequency coverage]," says Bill. "Both the Radio Shack PRO-2006 and the ICOM R7100 have better

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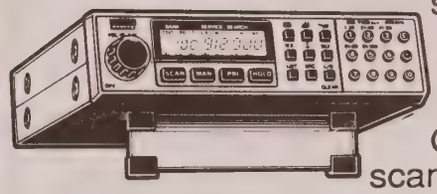
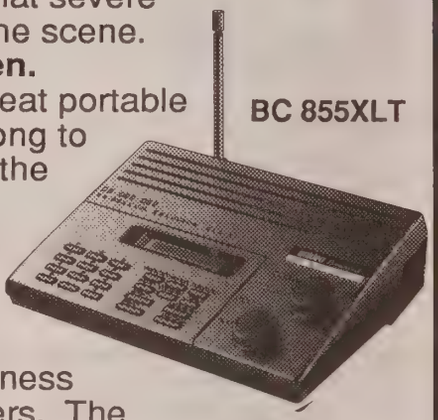


BC 760XLT

Check out our **Bearcat 200 XLT**. A great portable scanner that goes everywhere. Take it along to the races, on that camping trip or even to the lake. This full featured scanner has 200 easy to program channels with 10 scanning banks and 12 band coverage! Nothing escapes the **Bearcat 200 XLT.** All public service and emergency bands are featured along the 118 mhz to 136 mhz aircraft band and the new 800 mhz police and business band! Or choose from a full line of desktop scanners. The **Bearcat 855 XLT,** is a powerful home performer and has excellent sensitivity for really bringing in those weak signals. The **Bearcat 855** has all your favorite bands including 800 mhz. We also have the excellent **Bearcat 760 XLT** featuring one button Service Search. Say you don't know the active police frequencies in your area? Just push the button with the police icon and soon your **Bearcat 760 XLT** is searching the police bands automatically, looking for the action! The **Bearcat 760XLT** also comes complete with 800 mhz band coverage.



BC 855XLT

BC 200XLT

Want a full featured scanner that won't dent your budget? The Bearcat **147 XLT** is for you. 10 band coverage and 16 channels of scanning excitement at a low price that any monitoring enthusiast won't be able to pass up. Or try the **147 XLT's** little brother, the Bearcat **142 XL** featuring the same ten band coverage and up to 10 channels for programming the local action frequencies, including instant weather.

The first word in scanners sales is **R & L Electronics.** The friendly professional people at **R & L Electronics** carry a full line of **Uniden Bearcat** scanners and accessories. They also carry the famous "Betty Bearcat" Frequency guide and the National Police Directory in stock.

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First Word

"...the best place to look is in Police Call."

Monitoring Times

More people buy POLICE CALL than all other VHF/UHF directories combined. Have you bought yours yet?

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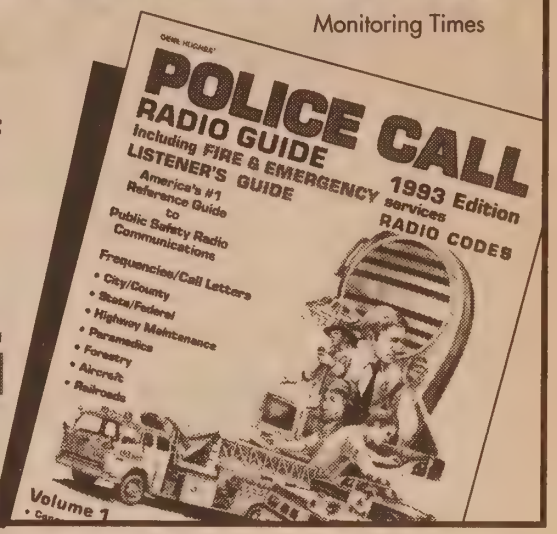
•At your scanner dealer
•At all Radio Shack Stores



coverage." Yes, Bill, but they also have considerably higher price tags! The '890 lists at around $490.00 andretails anywhere between $250 and $280. The PRO2006 lists and retails for $400.00. And the ICOM will cost you anywhere between $1,250 and $1,600!

Alan R. Millmaker (IL 4 PSR) in Lentralia, Illinois, confirms that there is a misprint in the '890's owner's manual. Alan says he connected his '890 to a tape recorder and did not get the time, frequency and channel announcement that the scanner promised. Alan also mentioned that the manual did not advise how to clear the count feature. Smart guy that Alan is, he figured it out: to clear one channel at a time, press the period button twice. To clear the count feature on all channels, turn the power off and on again.

Monitoring "The Big One"

Shayne Lovitte (AL 4 ACW) was at the radio when the Amtrak Sunset Limited derailed near Saraland, Alabama in late September. Normally, Shayne would have been in the thick of the action -- he's a firefighter/EMT in nearby Prichard -- but could not respond to the scene because of a serious illness in the family. Here's Shayne's report:

"On September 22 at 3:00 am, a tug boat pilot was pushing 6 barges up the Bayou Canot when he radioed that he was lost due to fog. A few moments later he reported that a barge hit a bridge -- the same 80 year-old bridge on which the Amtrak Sunset Limited was passing. As you know from news reports, the train left the tracks and plunged into the bayou. The accident was soon followed by the largest response of emergency personnnel ever dispatched in Mobile County. There was so much going on the my Bearcat 890XLT and my BC200XLT could hardly keep up with the action! If you are one of those people who thinks you don't need a list of disaster frequencies for your area -- like I was -- then start working on one now. It might even save your life!" The following is a list of agencies that responded to the derailment.

Mobile Fire Department--460.575, 460.600 • Mobile Police Department--453.100 • Newmans Ambulance--155.205
Fountains Ambulance--155.160 • National Guard--134.750 • CSX Railroad--160.370 • FBI--164.55, 163.625, 169.45, 166.535
US Coast Guard--156.800 • Fire/Safety--157.050, 157.150 • Mobile County Civil Defense--453.600, 453.400

"Of the 210 people on board, 47 people perished. A major part of the communications consisted of dealing with the dead at the scene. I love scanning and I will be listening for the next 'big call,' but I hope the next one won't be as bad as this one. I dedicate this article to the families of those who died in this tragic accident." Thanks, Shayne. We at *NatScan* dedicate this and every issue to you -- the people who respond to the 'big calls' and the little ones, too. May God bless you all."

Changes in LA

We just got word from *NatScan* reader H. Henry Lee (CA 3 TTE) that the Southern California Rapid Transit District is now known as the Metropolitan Transportation Agency (MTA). The new radio system is set up as follows:

Channel--Frequency--Location
1--472.5375--Verdugo
2A--472.6375--Verdugo
2B--472.6375--Sierra Park
3--472.5625--San Pedro
4-- 472.6625--San Pedro*
5-- 472.5875--1st Interstate Bank Bldg. LA
6--472.6875--Rio Hondo
7-- 472.7125--Rio Hondo*
8-- 472.6125--Rio Hondo
9A 471.3625--Verdugo*
9B-- 471.3625--Sierra Park*
10A-- 471.3375--Verdugo
10B-- 471.3375--Sierra Park
10C-- 471.3375--San Pedo
10D-- 471.3375--Rio Hondo
11-- 471.2125--San Pedro
12A-- 471.9875--Verdugo
12B-- 471.9875-- Sierra Park
12C-- 471.9875-- San Pedro
12D-- 471.9875--Rio Hondo
13A-- 472.0375--Verdugo
13B-- 472.0375--Sierra Park
14-- 472.0625--1st Interstate Bank Bldg, LA
15--472.1375-- Rio hondo
16-- Not Used -- N/A
Frequencies marked with an "*" are data channels.

"Drop a Dime"

and other things radio users say

Les Mattson's
Dictionary of Scanner Terms, Slang and Abbreviations

Les Mattson's
Dictionary of Scanner
Terms, Slang and Abbreviations

Every form of two-way communications has its own language, a kind of verbal "shorthand," used to get the message across efficiently and, in some cases, securely. Knowing the meaning of what you're hearing on the radio can mean the difference between understanding what's happening or sitting there scratching your head.

Scanning authority, Les Mattson, has assembled an incredible collection containig thousands of terms and abbreviations and their meanings in the new, Dictionary of Scanner Terms, Slang and Abbreviations.

Arranged alphabetically, the subjects covered include law enforcement jargon, military slang, medical terms, fire, rescue and even federal lingo. *This book will improve your comprehension of all types of radio communications.*

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Psyching You Out

Ed Kolvak (NC 2 EFK) is "a former military man" who lives just outside Ft. Bragg, North Carolina. "I enjoy monitoring the military, but especially Ft. Bragg because it's the home to the 4th Psyop [4th Psychological Operations Group – ed.].

"These were they guys that blasted General Manuel Noriega out of the Vatican Embassy during the 1989 invasion of Panama by setting up loudspeakers and playing heavy-metal rock music. During the Persian Gulf War, when the army wanted Saddam Hussein to think that Kuwait would be invaded by sea, the 4th Psyop spent a day stuffing cartoons of men marching up the beach into 12,000 bottles. Then they hired a smuggler to dump them offshore." Says Ed, "They also planned to drop 10,000 dismembered Barbie and GI Joe dolls over an Iraqi position but later changed their mind. I heard the guys saying that it might be too bizarre. In any case, the war ended three days later.

"I got a lot of my frequencies out of Daryll Symington's *Monitoring the Military*. Some others I found on my own or got from friends who still work at the base." Here's part of Ed's list:

Ambulances–150.500 • Dispatch–142.350, 231.000
Fire Department–165.0875 • Hospital–150.425
Military Police–42.200, 142.200, 173.4875
Operations–299.400, 341.200 • Paging–163.375
Tactical Operations–41.400

Ed adds that you can tune in 141.250 and 265.600 for weather forecasts noting that "these are entirely different weather forecasts from the ones you'll hear on the NOAA frequencies marked 'WX' on your scanner.

You Don't Even Have To Get Wet

We've always been surprised that more scanner listeners don't get into monitoring the marine bands. The frequencies are covered by virtually every scanner and communications are easy to understand. Just about everything is in plain English. During a recent trip to Maine, I had the opporunity to listen in as people on shore tried to locate a missing boater, then guide him to safety by parking cars on the shoreline and flashing their headlights like lighthouses. The entire rescue took a couple of hours and along the way we heard fascinating descriptions of the area, as the rescuers and the lost boater tried to identify their positions. If you don't live near navigable water, try the marine band anyhow as thousands of these radios are sold and used illegally, even in the landlocked midwest. Set your scanner to search between 156 to 162 MHz. Or pick up a copy of Bob Coburn's *Maritime Frequency Dirtectory* for specific frequencies. The book is $24.95 plus 4.25 UPS or

$3.00 postal service delivery from DX Radio Supply.

British Columbia has its share of ferries and monitoring their operations is one of the things scanner folks do, according to Tod Maffin. He posted these frequencies for us to try. Notice that a few of the freqs are in the maritime band, but others appear in the business bands.

156.4500--Seabus Ferries ("Burrard Beaver", "Burrard Otter") • 156.6000--Seabus Ferries ("Burrard Beaver", "Burrard Otter")
153.7400--British Columbia Ferry Corp.
155.1900--British Columbia Ferry Corp.
454.1375--British Columbia Ferry Corp. (telephones) • 458.6375--British Columbia Ferry Corp.

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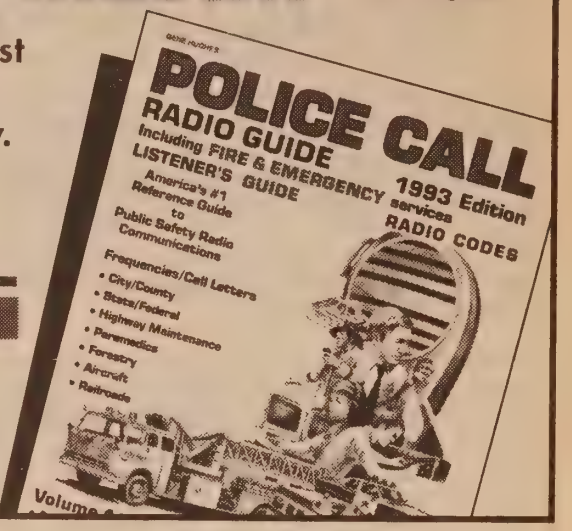


Something in the Air

Roger West (WI 9 ACT) happened to be at the scanner when a 56-year-old man was killed as he tried to abort a landing at Boyceville (Wisconsin) Municipal Airport. Roger tells us that the following frequencies became active following the crash on westbound Wisconsin Highway 170 as the Beechcraft, unable to gain altitude, proceeded to strike a truck and crash:

Dunn County Sheriff's Office--155.595 • EMT's--155.340 • Dunn County Fire--154.190 • FAA--172.175 • NTSB--165.7625
Boyceville Municipal Airport CTAF (Common Traffic Advisory Frequency)--122.900.

Roger's letter reminded me that the National Transportation Safety Board, whose "Go Team" responds to all major aircraft accidents, is an agency that should be monitored. Here's their nationwide frequencies: 165.750, 165.7625, 166.175 MHz.

Finding Secret Frequencies

No one can hide from Allen Cole. If you use a radio, chances are that he'll find you. That's because he knows his frequencies, knows his radios and has a logical, no-nonsense approach to hunting down the things he wants to hear on his scanner. On a recent trip, he wanted to hear secutiy guards at the hotels in the area. He explained the process in his NESN column.

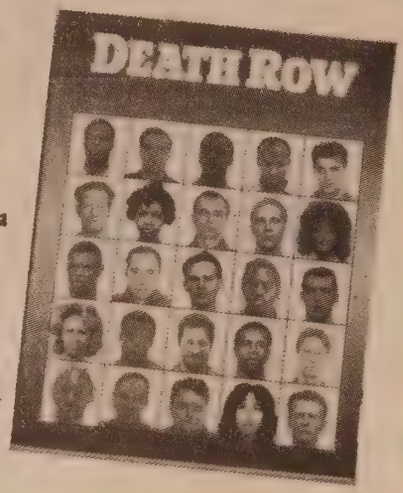
"Here are the areas that I try to scan before resorting to a full-blown search. These are selected parts of the Business Radio Service spectrum. "My VHF-High bank includes 16 channels contained at 151.625--151.955 and 154.515--154.600. My low-power/itinerant bank includes frequencies from the two-watt band at 457.525--457.600 and 467.750--467.925 as well as individual gems like 154.570 and 154.600. The bank also gets the itinerant frequencies 151.625, 464.500, 464.550, 469.500, 469.550, and 853.4875. The third bank includes UHF frequencies allocated for local control. These include 464.325, 464.375, 464.425, 464.475, 464.525, 464.575, 464.675, 464.775, 464.825, 464.875, 464.925, and 464.975. To round out the bank, I also reprise the UHF itenerant frequencies of 464.500 and 464.550, and the GMRS [General Mobile Radio Service] frequencies, 462.575, 462.625 and 462.675. All five are popular with those off-the-shelf 'colored dot' radios. My fourth bank is a repeat of the third bank except that everything is 5 MHz higher. If you're looking for on-site radios in a non-government/non-industrial setting, these are the ones to check first. If the frequency you're looking for is not among them, then it's time to search. I use memory banks for my shortcuts because my scanner only searches one continuous range at a time. Rather than search 151.625--151.955 and 154.515--154.600 separately, I can combine them in one bank. The low-power/itinierant bank also consolidates several search ranges. I keep these four banks in my scanner most of the time so that I can bring them into my scan whenever I see an unfamiliar radio in use."

The Washington Follies

If you've ever wondered what it would be like to be a police officer in a Third World country, read P.J.

DEATH ROW
FACES AND FACTS

- *Facts in the cases of death row inmates and the montrous crimes they committed – and their faces.*
- *Facesthe facts that support the use of capital punishment to deter potential murders – and the ones that don't.*
- *Facts that show captial criminals are escaping death, more often than not, despite the wishes of a majority of the population.*



Death Row is a 254-page reference that provides a roster of every inmate on death row, many with details about the crimes they committed; twelve profiles are presented in an expanded form. Regarded by law enforcement officials as the only definitive source for current information on capital offenders, Death Row is a must-have, must-read book.

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O'Rourke's book, *Parliament of Whores*. It's about a night the writer spent with the Washington, DC Police Department. From pressure-cooker inner-city neighborhoods brought to full boil by an unchecked drug trade to an out-of-control national government armed with thousands upon thousands of radios, DC is a place where there's never a dull moment for scanner listeners. If you have the misfortune of having to spend time in this festering sore, here's a list that will keep you busy. Notice that the US Secret Service frequencies are active nationwide. Thanks go to our anonymous contributor in DC for these numbers.

122.7500–Aircraft Unicom
123.0500–Helicopter Unicom
158.7900–Metro Police DC (MPDC) Intelligence Units
162.2500–US Capitol Police Ch 7/8 Emergency Responce Team
164.4000–US Secret Service PAPA Channel "Blueprint"
164.6000–US Capitol Police Ch 5/6 Detectives • 164.6250 US Capitol Police Ch 2/4 Patrol Ops
164.8000–US Capitol Police Ch 1/3 Patrol Ops • 164.7500–US Secret Service TANGO VP Detail
164.8875–US Secret Service OSCAR White House VIP Movements • 165.2125 US Secret Service MIKE Dignitary Protection
165.3750–US Secret Service CHARLIE Presidential Detail • 165.7875–US Secret Service BAKER
165.6875–US Secret Service "WFO" • 166.5125– US Secret Service SIERRA
166.7250–US Park Police Ch 1 Special Ops (7XX Cruisers) • 166.8500–US Park Police Ch 4 • 167.0750–US Park Police Ch 3
166.9250–US Park Police Ch 2 • 170.8250–FBI Special Ops • 416.1500–Architect of the Capitol
414.8500–USSS/UD Ch 1 "Boardwalk" • 415.9750–USSS/UD Ch 2 "Boardwalk"
460.2750–MPDC A-11 Special Ops Division (6XX) • 460.4250–MPDC A-9 Command Channel
465.0000–MPDC D-11 Special Operations Surveillance • 460.3250–MPDC A-12 Citywide

Have you ever seen those tourist ads that say, "And don't forget your American Express?" The ad for DC should say, "And don't forget your bullet-proof vest."

Homocide Capitol

In 1992. East Palo Alto, California, received the dubious distinction of being the nation's homocide capital with 42 killings for a population of only 24,000. "We were running from shooting to shooting to shooting," said Capt. John Sterling. Things were so attrocious that the police were forced to give up, asking neighbors to patrol their own streets. Then came a phone call from a mysterious foundation. The caller asked two questions of the police chief: what do you need, and how much will it cost? In what seems like a modern fairy tale, this month East Palo Alto will begin receiving $506,000 -- a grant equal to about 10 percent of the city's annual budget. NatScan member Keith Gifford (CA 6 BAZ) passes along that encouraging news but notes that the grant "would allow the police department to buy an encrypted radio system to prevent the local drug dealers from tuning in on a scanner." Our philosophy at NatScan is that the selective use of encryption or "scrambling" is a necessary part of law enforcement communications. Nothing, in our experience to date, justifies total scambling of all public safety communications.

Turning Over a New Leaf

Saying that traditional policing methods just aren't working, Shreveport, Louisiana police chief Steve Prator divided the city into four patrol areas. Each patrol area is handled by a captain who will have the authority to act as a sort of "mini" police chief, deciding where to patrol and so forth. The new arrangement is patterned after a similar plan instituted by Newport News, Virginia. Gerald Burns, a Natscan reader, monitors the Shreveport police using a Bearcat 855XLT. "Here are some new police frequencies I picked up while searching

between 470 and 512 MHz," says Gerald. "These frequencies are not in any book yet. 474.750, 475.050, 475.150, 475.200, 475.350, 475.500, 475.525 and 475.650 MHz."

The Diamond State Gets A Trunk

Jack McCartan of Newark, Delaware, reports that officials in Dover are ready to sign a $14.3 million contract with Motorola for a new statewide 800 MHz trunked system. First to go online will be the state police, the state Transportation Department, and the Department of Natural Resources and Enviornmental Control. New Castle County operations are expected to go 800 MHz in the spring of 1995; state operations in Kent will be on the air in the summer of 1996 and Sussex county will follow in the summer of 1997. Says Jack, "Oh, no!!" By the way, congratulations are in order for Jack who recently volunteered to do a column in NESN. Way to go, Jack!

Tracking the Clinton Clan

It didn't take *National Scanning* readers long to track down the missing member of the First Family. We had identified the presidential couple's Secret Service radio code names (Bill is Eagle, Hillary is Evergreen). Now, Chicago's Jack Svetlik fills in the only blank remaining by supplying the code name of Chelsea Clinton: Energy. Write that down and use your scanner to check up on the Clintons next time they are in your town.

Car 54, Where Are You?

Here's a great story from Jim Hawthorne in Rainbow, California. Jim says that one of his most memorable monitoring experiences happened several years ago while monitoring police radio. Seems the first tests of a vehicle anti-theft transmitter were being conducted and "a car equipped with the gadget was actually stolen." A couple of Los Angeles Police Department units began tracking the vehicle, following its beep emissions and radioing reports back and forth to Dispatch about the chase. "Finally, the folks-in-blue calmly announced that they had found the swiped car." The location? Safe and secure behind a fence at the impound yard. The stolen car had been recovered by patrol officers earlier in the day and towed to impound. The anti-theft transmitter, however, was still broadcasting. So much for high tech or as Jim said, "Ah, progress!" The LoJack system data bursts can be monitored on 173.075 MHz.

Congrats!

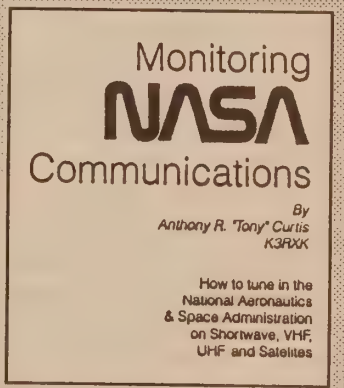
Finally, our congratulations go out to *NatScan* reader Jim Elinger. Jim's been involved in putting together a non-commercial radio startion in Austin, Texas, for the past 10 years. In January of 1994, says Jim, KO.OP Radio, 91.7 FM, is due to go on the air. We love it when dreams come true!

Making Contact

NatScan welcomes your letters regarding what you've heard, what your hearing and what you'd like to hear. Frequency lists and you're monitoring experiences, as well as your questions can be sent to Letters, Box 360 Wagontown, PA 19376.

Listen to America's Space Program!

Few things equal the thrill of monitoring America's space program. Turn on your scanner and you can actually listen to the crew as they go about their jobs, talk with mission control and even play jokes on one another.



Monitoring NASA shows you how to tune in the National Aeronautic and Space Administration on the scanner-bands, shortwave and satellite, both in space and on the ground. Half of the nearly 100 page book explore the full range of NASA operations; the second half concentrating on actual communications, including what the author -- veteran science writer Anthony Curtis -- desribes as "the world's most complete frequency list."

Monitoring NASA is $14.95 plus 2.00 book rate or 3.50 UPS shipping from your favorite radio store or from DX Radio Supply, P.O. Box 360, Wagontown, PA 19376. Phone 215-273-7823.

A Firefighter's Tools of the Trade

POLICE
FIRE
EMS

By Tom Swisher

Have you ever wondered what that engine company meant when they yelled "Bring up a halligan!" on the radio? A halligan tool is just one of several specialized tools used by firefighters for various purposes. Here is a list of the most frequently used tools and some of the things they can be used for.

CUTTING TORCH--An acetylene torch used for cutting metal.

HALLIGAN TOOL--Metal tool that has a flat edge and a pointed pick on one end and a claw hook on the other. Used for forcible entry, but also handy for holding up car hoods and trunk lids.

HOT-STICK--A long insulated tool used to cut power lines, usually where the wires enter a building.

HUX BAR--Tool with a curved pick on one end and a claw hook on the other. Also used for forcible entry and holding up car hoods and trunk lids.

"THE JAWS"--A hydraulic tool with interchangeable heads used for cutting or spreading. Used in rescue operations, especially auto accidents.

PICK-HEAD AXE--Axe with a pick on the other side. Used for forcible entry, overhaul and ventilation.

PIKE POLE--Pole with a sharp tip and hook on one end. Ranging in length from three feet to ten feet, they are used for pulling ceilings and walls during overhaul.

SPANNER WRENCH--A curved wrench used to tighten hose couplings.

We'll continue in another issue

with more definitions of the interesting things firefighters use to get the job done.

The Inquiry Channel

The traffic stop has been made, and the driver seems to be awfully nervous about something. Seems like a good time for a driving record and wants/warrant check. What radio channel to use?

Due to increasing levels of activity on the main channel, many police departments today cannot accommodate inquiries there without it becoming hopelessly overloaded. This means that they must have a separate channel for inquires.

Inquiry channels are known by various names. In some places it can be called simply "Inquiry" or "Information." In other places, it can be known by the name of the data computer system (in Ohio, the computer system is called "LEADS - Law Enforcement Automated Data System"; thus, some departments in Ohio call the inquiry channel "LEADS"). The names vary all over the country.

In most departments that have a separate inquiry channel, activity on the channel includes driver status and driving record checks, wants and warrants checks, and criminal history checks. In larger departments, however, more extensive record checks are not usually done on the inquiry channel since they can take a lot of time to read back, thus preventing other units from using the channel. A separate "Records" channel is then used for extensive background checks.

Listening to the inquiry channel can give you hours of fun and amazement hearing the records of all the naughty people out there. Tune in and give it a try.

Following the Patient to the Hospital

"Medic 101 to Riverside ER... we are enroute to your facility with a 17 year old female out of an auto/train accident. Patient was trapped in the vehicle and is suffer-

ing from multiple head and chest trauma, with injuries. Pulse is 120, BP is 90 palpated, respirations 20 and shallow. We have c-spine immobilization, O2 and IV, our ETA is 5 minutes!"

After you've heard the fire department successfully extricate a victim from the tangled wreckage of a car, did you search the VHF hospital channels for a patient report to the emergency room, only to hear a great big silence? You probably didn't search the UHF medical ("MED") channels. Many emergency medical services (especially in metropolitan areas) are changing over to hospital communication systems using the UHF MED channels, since these are less crowded than the VHF hospital channels.

There are 10 UHF MED channels. MED 1 through 8 are general channels used for medic to hospital communications, while MED 9 and 10 are dispatching channels (9 is primary dispatch, 10 the alternate). In most areas, MED 9 and 10 use repeaters; MED 1 through 8 occasionally use repeaters, but are usually duplex, with the ambulance transmitting on the higher frequency and the hospital base on the lower frequency.

Some emergency medical services use the UHF channels for telemetry to the hospital emergency room. Telemetry units allow the EMS units to send patient information such as electrocardiogram (ECG) strips, heart rate, blood pressure and respiration directly to the emergency room. This information, with a verbal description of symptoms and tentative diagnosis by the EMS, allows the emergency room to confirm the information and have the proper equipment ready before the patient arrives. Try these channels:

CHAN.	BASE	MOBILE	
MED 1	463.000	468.000	
MED 2	463.025	468.025	
MED 3	463.050	468.050	
MED 4	463.075	468.075	
MED 5	463.100	468.100	
MED 6	463.125	468.125	
MED 7	463.150	468.150	
MED 8	468.175	468.175	
MED 9	462.950	467.950	- Dispatch
MED 10	462.975	467.975	- Alternate dispatch

If you've never heard the ambulance-to-hospital commnications in your area, try listening to the MED channels. There are all sorts of interesting things to hear.

"I wanted to thank the NatScan staff for an excellent issue."

--Bruce Robinson, Utah

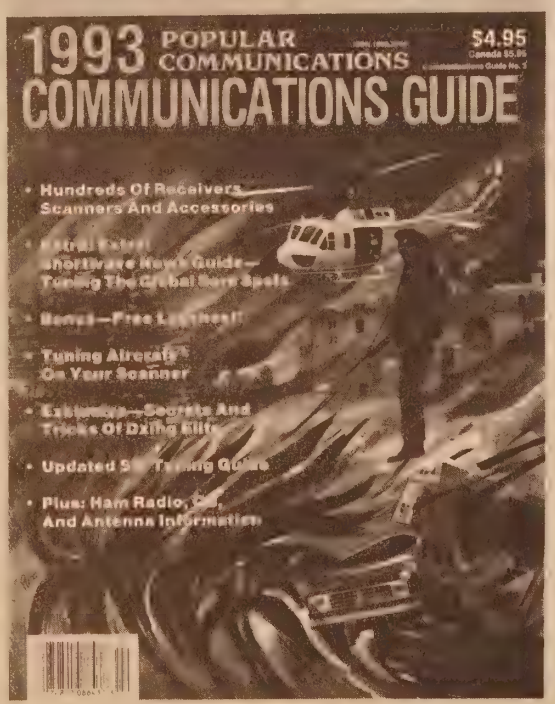
1993 POPULAR COMMUNICATIONS COMMUNICATIONS GUIDE

Completely updated with the latest information on new receivers, scanners and amateur transceivers, the Winter Communications Guide has something for everyone!

You can get the specs and prices on all the products to make your shack complete, from top-of-the-line receivers to SWR meters, our Guide has it all. You'll learn how and where to hear the "tough ones," how to select and install a mobile CB antenna and how to tune in the aircraft bands from the writers who REALLY KNOW the ins and outs of SWLing and DXing. As an added bonus, an in-depth article by Chuck Gysi gives you the inside scoop on hearing all the sports action, whether you're at the races or ballpark.

** If you're a new Technician class ham, there's a bonus article to help you learn the ropes of using a repeater.

** For scanner enthusiasts, noted skip communications expert, Chuck Robertson tells you all about skip scanning; how to hear those distant stations on your scanner!



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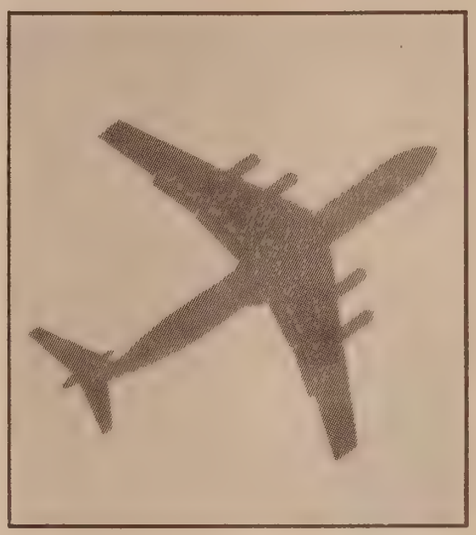


SCANNING AROUND

BY LAURA QUARANTIELLO

WITH GARY STURM

In the fires of aerial combat, there are no second chances and there can be no mistakes. Our military aviators take advantage of peacetime to learn the lessons of war before they face an enemy. They train day in and day out for the ultimate call to duty. It is here, above blue oceans and quiet countryside, in special military regions called warning areas and operations areas, that the training takes place. To a scanner monitor, it's the closest you can get to a fighter or bomber cockpit without signing up.

Perhaps the largest training areas are known in military parlance as FACSFAC's--Fleet Area Control and Surveillance Facilities. The US DoD Flight Information Publication describes FACSFAC's:" The Navy FACSFAC mission is to provide scheduling, communications links, control, containment, coordination, Search and Rescue and a variety of other services to all military and civil aircraft operating in the Warning Areas and off-shore operations areas (OP-AREAS) along the US east, west and Gulf coasts and around Hawaii..."

FACSFAC's are under the radar control of the US Navy. Each control facility has a call sign used in radio communications. FACSFAC Jacksonville, Florida, for instance, is "Sealord." Controllers use a combination of VHF and UHF frequencies to control incoming and outgoing flights to the OPAREAS. Typically, a flight will be handed off from an enroute controller just before entering FACSFAC airspace. Most flights are on IFR (Instrument Flight Rules) flight plans and will cancel and proceed VFR (Visual Flight Rules) once in the OPAREA. The job of the FACSFAC controller is to vector the aircraft to an appropriate working area, a pre-assigned sector of airspace where operations will be conducted. Once in the working area, flights are asked to monitor the controller for advisories and are given a "discrete" frequency. FACSFAC's usually maintain their own discretes, which are assigned randomly to aircraft to use for air to air communications. It isn't unusual for flights working the OPAREAS to use their own discrete or tactical frequencies.

The handoff to a discrete is given over the air and simply punching in the numbers will bring a listener up on the correct frequency. Squadron tacticals and air to air frequencies aren't usually given over the air unless a controller asks, or a pilot reiterates the correct channel for his wingmen to switch to. In any case, listen carefully! After the mission has been completed, flights will switch back to the controllers "check-out" frequency for RTB (return to base.)

What happens in the OPAREAS is the most fun to monitor, from air to air gunnery, to air combat maneuvering (ACM) to anti-submarine warfare. Start by monitoring the FACSFAC's air traffic control frequencies and you'll be sure to pick up other frequencies of interest. (See table, next page.)

Hot Aero Targets

What's new to listen for on the aviation band? Pull up a scanner and I'll tell you. Here's some hot tips from readers on what's up:

- If you're in the area of Cape Canaveral, Florida, be advised that the Federal Aviation Administration flies airspace patrols around the shuttle launch site. Two King Air 90's (rented from Air Orlando and Hanger One) are on scene beginning

FLEET AREA CONTROL AND SURVEILLANCE FACILITIES (FACSFAC)

FACSFAC VACAPES
Eastern United States
Call sign: Giant Killer
Location: Virginia coast
Areas: W-50, W-72, W-105, W-106, W-107, W-108, W-110, W-122, W-286, W-387
VHF: 127.650, 135.875, 135.725, 135.225
UHF: 233.700, 350.000, 251.600, 310.100, 249.800, 255.000, 338.100, 305.000
HF: 2252, 4373

FACSFAC JACKSONVILLE
Southeastern United States
Call sign: Sealord
Location: Jacksonville, FL, Beaufort, SC, and Patrick AFB, FL
Areas: W-132, W-133, W-134, W-157, W-158, W-159, W-497
VHF: 120.950, 134.650, 135.925, 135.825
UHF: 267.500, 274.500, 313.700, 369.900
ATIS: 265.200

FACSFAC PENSACOLA
Gulf of Mexico
Call sign: Seabreeze
Location: Pensacola, FL
Areas: W-155, W-453, Eagle Echo, Eagle Golf, Eagle Zulu ATCAA
VHF: 118.425 UHF: 313.200, 275.600, 303.400, 280.700, 383.800, 274.200, 306.800, 346.500, 353.200, 385.200, 382.000, 362.800
HF: 6835

FACSFAC SAN DIEGO
Southwestern United States
Call sign: Beaver
Location: San Diego, CA
Areas: W-513, W-260, W-283, W-285, W-291
VHF: 118.650, 120.850
UHF: 285.700, 289.900, 272.600, 266.900, 314.700, 344.100
ATIS: 282.000

FACSFAC WHIDBEY
Northwestern United States
Call sign: Down Rigger
Location: Whidbey, WA
Areas: R-5701, R-5706, Boardman MOA/ATCAA, Olympic A/B MOA/ATCAA, W-237 A/B, W-601 A/B, W-460 B and R-6707
VHF: 126.2, 135.3
UHF: 337.1, 337.8, 360.2

one hour prior to a scheduled space shuttle launch. Call signs are Patrol One and Patrol Two. FAA is tasked with maintaining the integrity of the restricted area that surround Cape Canaveral. Both King Air's fly kidney-shaped patterns at nine and ten thousand feet, and are directed by Patrick Air Force Base controllers toward potential trespassers. It's the job of the King Air's to intercept and steer the intruders away from the launch site. Listen for Patrol One and Two on Patrick AFB approach frequencies.

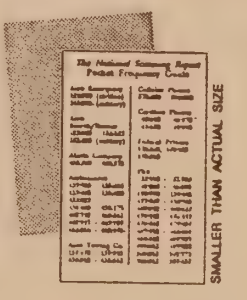
- The AirCell company of Dallas, Texas has completed testing of an airborne cellular telecommunications system. It should be offering service by the time this column goes to print. AirCell maintains 50 antennas to drive their 300-mile radius cells. Callers in the air will access existing mobile telephone ground cells and enter the long-distance trunk system. AirCell says calls will be "seamless, as an airplane is handed from one cell site to the next." Stay tuned for more!
- Texas is full of good aero targets. Texas Air Aces at David Wayne Hooks Memorial Airport north of Houston offers dogfighting, air combat maneuvering, formation and aerobatics training in their T-34A's. All this is accomplished via laser gun systems, gunsights, threat detection, smoke systems and video recorded sessions. You don't have to be a pilot to fly; single missions are $650, five flight Air Aces program is $3,000. If you'd rather listen in, it's just as much fun. Try searching 128.825-132.000 MHz and 121-124 MHz for air to air action.

Rescue In the Rockies

As you travel cross country on vacation or business, railscanning can be more than listening to dispatchers issue train orders. On occasion you may have an opportunity to listen to something exciting like a train crew on a rescue mission. On our recent vacation to the southwest United States, we came across a "Rescue in the Rockies" and listened with interest while a train crew worked with emergency personnel in the rescue of injured whitewater rafters.

As we drove down Poncha Pass during the late afternoon hours of July 5, 1993, an emergency arose outside Salida, Colorado. We listened to moment-by-moment radio traffic between a Southern Pacific dispatcher channel #2 (160.455 MHz.) and nearby train crews. The channel crackled with activity as the dispatcher described the ac-

The Official National Scanning Report
Pocket Frequency Guide



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--- Don't Leave Home Without It!

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cident to train crews and a request for the railroad's assistance in extricating injured whitewater rafters from a narrow canyon on the Arkansas River near Salida.

According to the dispatcher, a young woman had been severely injured white water rafting on the Arkansas River near Salida and needed to be removed from Brown Canyon. However, emergency personnel were unable to remove the accident victim from Brown Canyon because it is inaccessible to any type of emergency equipment such as an ambulance or a four-wheel drive vehicle. The only way into the canyon was by rail. So authorities contacted the Southern Pacific (ex-Denver & Rio Grande Western) dispatcher in Denver and asked for the railroad's assistance. The dispatcher stopped all rail traffic through the canyon. A maintenance of way employee drove to the site in his hi-rail truck. This is a vehicle fitted with railroad wheels that guide the truck on the rails.

After arriving at the accident scene, he drove out of the canyon with the injured woman on board the hi-rail truck. He drove to a point where the victim was placed on a rescue helicopter and airlifted to a hospital in Pueblo, Colorado. Interestingly, the helicopter could only land on the railroad right-of-way due to the mountains. Upon conclusion of the rescue, the dispatcher said trains were stacked up and he had to start the rail traffic again. We also listened to another rail emergency on this vacation. As our vacation came to a conclusion, we began the long drive from Colorado to Indiana. As we drew closer to the Mississippi Valley region, we listened with intent as railroad dispatchers discussed the flood situation. It sounded very grim. Many railroad bridges were flooded by the rising waters of the Mississippi River. Freight and passenger trains were being delayed and some were being rerouted to St. Louis and even further south of that point.

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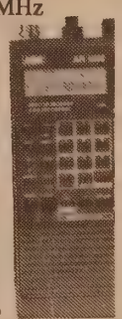
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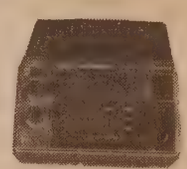
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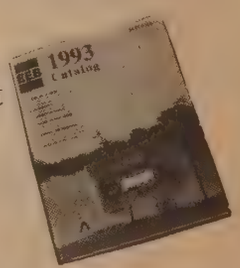

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Easy On/Off Antennas for Anyone's Car

Simple Scanning *Projects*

By Wayne Heinen

Scanning mobile serves two purposes. First, it keeps you informed of the immediate things happening around you. Secondly, it eliminates boredom. The first thing you need to decide is if you can legally go mobile? I know that you can't scan mobile in the Commonwealth of Kentucky, they have a law against mobile scanning. If you're considering mobile scanning check with your local authorities to find out if it is legal. If they don't know, I would suggest getting a copy of *Listener's Lawbook*. This book covers the United States and will be of great interest if you do a lot of interstate travelling. There may be places where dismounting your scanner may be required, because if you're caught it could mean a ticket.

After you know about the legality of mobile scanning, you'll need to decide how you want to go about it. Some people go whole hog and install a scanner into their car with a under dash mount and will install a permanent antenna. This route is not for everyone. It takes some skill and time to get a good installation.

I recommend the temporary approach, especially if you only have a HT (handheld) scanner to use. There are a variety of easy mountings and many HT's will fit in console cellular phone holders! Many people I know simply set the scanner in the console.

The most important thing after the scanner is the antenna. Your car absorbs most of the radio waves that are around you. Using your HT with a rubber duck, or even an extendable whip from within the car is usually very unsatisfactory.

Two good alternatives are the mobile magnet mount antenna (usually referred to as a "mag

Mag mount antenna

Window clip antenna mounts

mount") and the window clip antenna base. These go on easily and will provide a good "no damage" removable antenna for any car.

Mag mounts are sold by many companies and come in a variety of configurations. Some mag mounts are sold with only a base, 10 to 12 feet of coax cable and a BNC or Motorola connector. You would then purchase the correct antenna for scanning. Either a dedicated single band antenna, as for the UHF low or VHF high bands or a general purposes wide coverage (25 Mhz to 900 Mhz for example) whip. These whips are threaded to match the mag mount base. Another mag mount is an integral unit, antenna and base with coax, sold as one unit.

Your mag mount can be temporary or permanent, that's why they're so popular. A typical permanent mount would be on the car roof or trunk lid, with the coax snaked through the vehicle and usually hidden under the carpet or stuck up behind trim trips and molding. If it's on the car's roof make sure you can clear your garage door! The coax is brought through to the inside by just snaking it through the crack around the trunk lid and closing the trunk on it. This usually won't effect either the coax or the water tight seal around the trunk lid. They're rather thick foam and adapt rather well.

The temporary approach is on the roof of the car, with the coax snaked between the door jam and seal. Simply toss the coax in with the door open, make sure you have only enough outside to reach the antenna then close the door. I use this technique when we travel in my wife's car. The scanner sits on the console and I know when the trip is done, it's easy to just pull the antenna off the roof and the car is just the way it was before we started. This also allows you to remove the scanner and antenna so you can scan from a motel while you travel. A word of caution!! Never slide the antenna across the car's finish! Always pry one side of the base up by tipping the antenna, then pull straight up. This will avoid scratches to the car's finish.

Another good antenna for temporary mobile work is the window clip mount. These clips slide over the window when it's down, then simply roll up the window until the weather seal is secure and the clip is tightly held by the window. These come with BNC connectors that will accommodate your rubber ducky. I've got my best results using a 24" extendable whip (Radio Shack 20-006 $9.95) It's wide band and covers 25 MHz through 1300 mHz. The nice thing about these are they don't scratch anything, like mag mounts can do if not properly handled, and are easy to install and remove. If you have a job that has you driving a company vehicle, you may find that your employer may approve of this antenna mount and you'll be able to take your listening hobby with you to work. A similar type, on loan from a ham friend, has an adjustable BNC. This allows you to make sure that your antenna is absolutely vertical for the best possible reception.

Hopefully, you live where mobile scanning is legal and you can begin to take advantage of your hobby on the road. What I like best is knowing what's in front of me and what's behind me. The satisfaction of knowing that you need to take an alternate route to work, while other unsuspecting commuters head towards an intersection that's blocked by a traffic accident, makes your planning and preparation for mobile scanning worth the effort.

PHOTOS BY JOAN HEINEN

Listener's Lawbook, a collection of laws regulating scanning, arranged by state, is available from DX Radio Supply for $9.95 plus $4.00 UPS.

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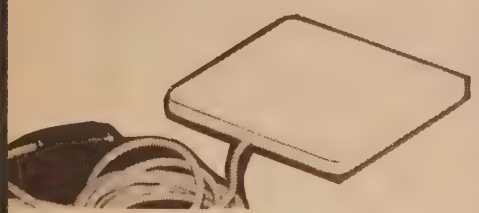

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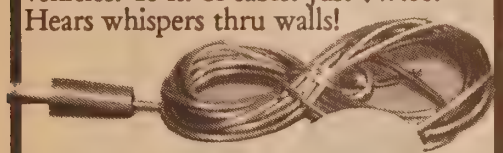

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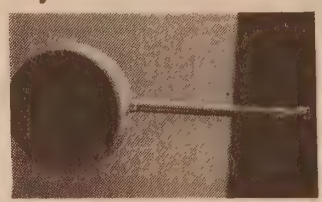

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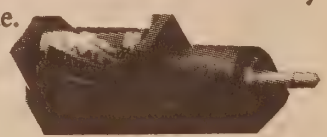

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Sporadic-E Season

VHF Low Band DX

By Brian Webb

As expected, Sporadic-E made its annual appearance earlier this year and brought the 30-50 and 72-76 MHz bands to life with distant signals from across North America. I took advantage of this interesting type of propagation and during an 11 week period, from May to August, logged 56 new DX catches from seven western U.S. states and Mexico. In addition, double hop E-skip allowed me to hear previously logged stations from Florida, Georgia, and Cuba along with unidentified stations from the U.S. EDT zone. Before I describe what I heard, you might be interested in learing about Sporadic-E progation and the type of equipment and monitoring methods I employed.

E-skip (also called Es) is the result of radio waves being reflected by dense, thin clouds of ions that form just below the E-layer of the ionosphere. These ionized patches form at altitudes between 50 and 60 miles and have diameters of 50 to 100 miles. One interesting charateristic of the clouds is their tendency to move towards the west or northwest at speeds from 150 to 250 mph.

Because of the low altitude and small diameter of a typical Es cloud, DX tends to be heard from a limited area. Distant signals recieved via Sporadic-E are usually from 375 to 1,300 miles away. The area from which signals are heard can be as small as 40,000 square miles, an area about the size of Indiana.

When more than one cloud is present, the number of areas that can be recieved increases. It's not unusual for me to be listening from my location in southern California and hearing stations from eastern New Mexico and west Texas via one Sporadic-E cloud and the Oregon-Washington-Idaho region via a second cloud. If two ionized patches are properly aligned with respect to the listener, radio signals can be reflected from from cloud to cloud and towards the DXer. Such double hop E-skip allows stations as far away as 2,600 miles to be recieved.

Es can occur at any time of year, but it's most prevalent during two Sporadic-E seasons. The primary E-skip seasons runs from the late spring to early summer. Es activity peaks during the four week period centered on the summer solstice. During the spring-summer Sporadic-E season, most skip appears between mid-morning and noon and again in the evening. A minor E-skip season occurs during a two month period centered on the winter solstice with most skip appearing in the evening.

The equipment and monitoring techniques that I used were relatively simple. Two recieving systems were used. The main setup was a 400 channel Realistic PRO-2006 scanner connected to a sloping dipole antenna cut for 35 MHz. My secondary system consisted of a 60 channel Realistic PRO-2024 scanner and a horizontal 30 MHz dipole. Other equipment that was pressed into service were two inexpensive cassette recorders, an Infotec M-600 demodulator and MFJ-752B active audio filter to read morse code station IDs, and a digital timer to turn a cassette recorder on and off for unattended monitoring.

The PRO-2006 was programmed with over 350 frequencies covering the range from 30 to 98 MHz. These frequencies were virtually all assigned to U.S. non-federal users such as businesses, paging companies, law enforcement, fire/paramedics, and so on. Several FM broadcast band frequencies were also loaded into the scanner. A small number of channel memories were loaded with frequencies were also loaded into the scanner. A small number of channel memories were loaded with frequencies used by the U.S. Fish and Wildlife Service, and 41.500 MHz, a heavily used U.S. Army air-to-ground frequency. To prevent local stations being mistaken for DX, only frequencies free of local stations were chosen and programed into the radio.

The PRO-2024, on the other hand, was loaded with frequencies used by U.S. goverment facilities within E-skip range of my location. The frequencies were obtained by combing through Tom Kneitel's The Top Secret Registry of U.S. Goverment Radio Frequencies, searching for federal installations between 300 and 1,600 miles from my location. A list of frequencies was made and the number of facilities using each frequency was counted and entered on the list. Most of the scanner's memories were programed with frequencies with more than four users. Several other memories were loaded with frequencies that weren't on the list, but were typical of those used by U.S. military and Mexican stations (namely frequencies within the U.S. federal sub-bands that end in even 50 MHz steps such as 34.450 MHz. A small number of frequencies for installations in remote, sparsely populated areas were also programed into the radio. This was done to insure balance; in other words, I wanted to avoid having all of my channel assignments being for a relatively small number of areas where there are disproportionate concentrations of goverment installations (such as Arizona, Colorado, and Texas). An example of one of these frequencies is 36.180 MHz which is used by the National Park Service at the Custer Battlefield in Montana.

During routine monitoring, the PRO-2006 was used to search programed frequencies for signs of Sporadic-E. Sometimes the PRO-2024 was used simultaneously with the PRO-2006. When a distant station was found, the radio was manually locked onto the frequency and the cassette recorder turned on. the audio would then be monitored for information that could be used to identify the station. Once the information had been logged, the channel would be locked out, in other words the radio was instructed to skip over the channel to prevent the

I wanted to monitor, but couldn't be at home, the PRO-2006 would be turned on and set to a frequency with plenty of E-skip DX (such as 33.300 MHz). The cassette recorder was plugged into a digital appliance timer and the timer was programmed to turn the recorder on during a prime Es DXing time, such as 16:45 UTC (09:45PDT). The timer would be programmed to turn the recorder off after 29 minutes or so to prevent the tape in the C-60 cassette from breaking or wearing out the recorder's tape drive. Upon my return the tape could be played and scrutinized for new DX catches.

Now let's move to my impressions of the 1993 spring-summer Sporadic-E season. Compared to the 1991 and 1992 Es seasons, much more double hop E-skip was heard this year. During the 1992 Es season, E-skip was heard on frequencies as high as the bottom of the FM broadcast band (88 MHz). In 1993 however, no Sporadic-E was noted above 76 MHz. There were more openings in the the VHF midband (72 to 76 MHz) this seasons compared to the same time in 1992. My biggest disappointment of the 1993 season was my inability to identify any of the VHF midband stations that were heard. The only thing that I was able to determine was that one of these stations, a paging transmitter, appeared to be located in Texas.

Overall, however, the 1993 spring-summer E-skip season was a fruitful one and I received numerous DX stations. A summary of what I heard is presented in Table 1.

ABREVIATIONS
Co.—County
CW—Morse code
EDT—Eastern Daylight Savings Time
EE—English
ID—Identification
INC—Incorporated
KM—Kilometers
SS—Spanish
UTC-Coordinated Universal Time (EDT + 4 hours)

Table 1. Stations Heard via Sporadic-E in Thousand Oaks, California

Date (1993)	Time (UTC)	Frequency (MHz)	Language	Callsign(s)	Location	Comments
MAY 22	16:07	30.580	EE	KKJ814	Levelland, Texas	Operated by D.L. Cass
MAY 22	16:41	33.440	EE	CHEROKEE	Cherokee Co., Georgia	Double hop E-skip. Cherokee County Fire Department
MAY 22	16:49-16:55	34.200	EE	NOVEMBER 73	U.S. (probably western)	Communications checks/troubleshooting. U.S. military
MAY 27	00:59	31.800	EE	MIKE 16	U.S. (probably western)	MIKE 16 calling X-RAY 17 MIKE and X-RAY 20. U.S. military
MAY 27	01:17	33.760	SS		Mexico (probably northern)	Mention of Lions Club guidebook #1. Base station
MAY 27	03:50-03:54	33.800	EE	IRON HAWK 5, IRON HAWK GREEN, and IRON HAWK WHITE	U.S. (probably western)	Night exercise. Probably U.S. Army
JUN 08	16:52	35.240	--	KPA355	New Braunfels or San Antonio, Texas	Paging station. CW ID heard. American Mobilphone
JUN 09	15:52	33.300	--	KNDY674	Heartwell, Nebraska	CW ID heard. Natural Gas Pipeline Company of America
JUN 09	17:25	43.100	EE	WYP863	Ozona, Texas	Fesco Inc.
JUN 09	17:32	35.120	EE	KJU464	Albuquerque, New Mexico	Troy's Welding Inc.
JUN 09	17:42	49.580	EE	KKL869	San Angelo, Texas	Operated by the Pool Company
JUN 09	17:45-17:46	49.580	EE	KNFH233	Stanton, Texas	TST Paraffin Service
JUN 09	18:04	44.220	EE	KJK613	Big Lake, Texas	Western Oil Transportation Company
JUN 09	18:34	49.340	--	KCK453	Rawlins, Wyoming	CW ID heard. Colorado Interstate Gas Company
JUN 09	19:06	48.780	EE	KKC688	Sunray, Texas	Shamrock Pipeline Corp.
JUN 09	?	33.375	SS	CONTROL	Cuba	Double hop E-skip. Agriculture network base
JUN 09	?	45.000	EE		Florida	Double hop E-skip. Florida Marine Patrol
JUN 12	03:25	33.920	--	WIWD264	Bell Co., Texas	Fire/paramedic frequency. CW ID heard. Operated by Bell County
JUN 13	17:46	49.240	EE	KKZ405	Maljamar, New Mexico	Holly Corp.
JUN 16	17:08-17:10	35.740	EE	KNBY934	Wolforth, Texas	Horkey LP Gas Company Inc.
JUN 16	17:24-17:25	33.300	EE	KEZ442	Kingsmill, Texas	Natural Gas Pipeline Company of America
JUN 16	18:18	32.850	EE	INDIA 86 and PAPA 62	U.S. (probably western)	U.S. military
JUN 16	18:37	33.300	EE	KJV853	Artesia, New Mexico	Natural Gas Pipeline Company of America
JUN 16	18:39	33.300	--	KNBY979	Evanston, Wyoming	CW ID heard. Natural Gas Pipeline Company of America
JUN 16	19:20	49.320	--	KDI684	Andrews, Texas	CW ID heard. Exxon Communications Company
JUN 16	19:36	44.980	EE	KAO344	Kansas	Kansas Highway Patrol
JUN 17	17:00	46.400	SS		Mexico (probably northern)	Cordless or radiotelephone
JUN 24	16:43	47.020	EE	KEY901	Lubbock, Texas	Highway maintenance frequency. Texas Department of Highways and Public Transportation
JUN 24	16:58	46.120	EE	WNDK512	Canyon, Texas	Fire/paramedic frequency. Operated by the city of Canyon
JUN 24	17:51	33.300	EE	KKD558	Gray, Oklahoma	Natural Gas Pipeline Company of America
JUN 24	18:05	41.500	EE	RANGE 40	U.S. (probably western)	RANGE 40 heard calling RANGE CONTROL. U.S. Army air-to-ground frequency
JUN 24	19:53-19:59	41.100	SS	DOCTOR and VICTOR	Mexico (probably northern)	Traffic regarding construction and fumigation
JUN 25	17:36	33.300	EE	KKW243	Mountain View, Oklahoma	Natural Gas Pipeline Company of America
JUN 28	16:46	33.300	EE	KKD388	Fritch, Texas	Natural Gas Pipeline Company of America
JUN 28	17:00	33.300	EE	KDS699	Marlow, Oklahoma	Natural Gas Pipeline Company of America
JUL 01	20:20	33.300	EE	KKF278	Dumas, Texas	Natural Gas Pipeline Company of America
JUL 02	16:52	33.380	--	WNCS806	Sunray, Texas	CW ID heard. Phillips Pipeline Company
JUL 02	17:19	47.060	EE	WNXE417	Texas	Highway maintenance frequency. Texas Department of Highways and Public Transportation
JUL 04	20:03	44.800	EE	?	Santa Fe, New Mexico	Conservation frequency. New Mexico Department of Game and Fish
JUL 05	18:33	47.260	EE	WNH464	Fabens, Texas	Highway maintenance frequency. Texas Department of Highways and Public Transportation
JUL 05	18:48-18:51	41.300	EE	ROMEO 3 and ROMEO 5	U.S. (probably western)	Clear and encrypted voice. U.S. military
JUL 08	17:29-17:31	37.680	EE	KGJ294	Great Bend, Kansas	Kansas Power and Light Company
JUL 14	17:42	41.500	EE	FLIGHT OPS	U.S. (probably western)	FLIGHT OPS heard calling 72. U.S. Army air-to-ground frequency
JUL 15	17:12-17:13	37.460	EE	?	Waco, Texas	Texas Power and Light Company
JUL 15	17:42-17:46	38.500	EE	HAND GRENADE RANGE and RANGE CONTROL	U.S. (probably southwestern)	Live hand grenade training. U.S. military
JUL 19	18:26-18:28	37.540	EE	KRU225	Salina, Oklahoma	Power utility frequency. Grand River Dam Authority
JUL 21	16:53	30.920	--	WNXK917	Monahans, Texas	CW ID heard. United Video Cablevision Inc.
JUL 21	17:33-17:34	39.860	EE	KYG742	Downieville, California	Sierra County Sherriff's Department
JUL 23	19:13	33.300	EE	KKS770	Bridgeport, Texas	Natural Gas Pipeline Company of America
JUL 24	16:39-16:40	49.180	EE	KOG463	New Castle, Wyoming	Operated by Updike Brothers Inc.
JUL 26	18:47	33.300	EE	KLY412	Laketon, Texas	Natural Gas Pipeline Company of America
JUL 26	20:35	33.300	EE	KKS549	Miami, Texas	Natural Gas Pipeline Company of America
AUG 08	16:03-16:13	34.500	--	RANGE CONTROL	U.S. (probably western)	RANGE CONTROL heard talking to 117. U.S. military

Frustrating Moments in the Life of a Scanner Owner

with Gene Hughes

SCANNER SCHOOL

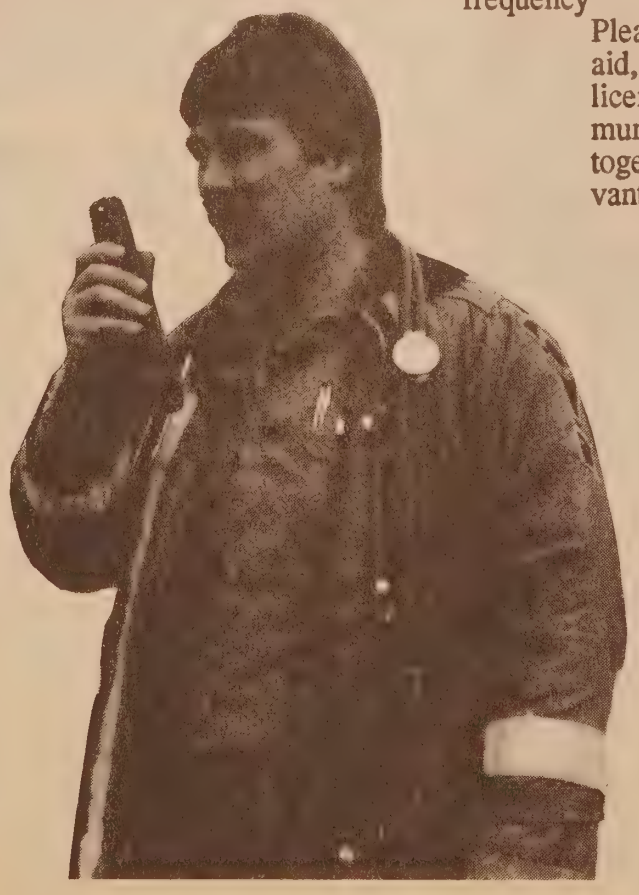
You've just bought your first scanner. You set it up, and turn to the page in your directory book for the police frequencies. There aren't any! Aargh! One bright morning, you turn on your scanner to find out what's happening in town. Something is wrong: not a sound for over an hour. You punch up some other frequencies to make sure the scanner is working. It is. Your police have vanished without a clue. Aargh!

The local police dispatcher tells his units to "switch to the 'tac' channel." No such animal is listed in your frequency book. Aargh!

Where are they? With the FCC rules being loosened up, and new technologies taking over, you may have to play detective in order to hear the real detectives. We'll supply the clues. It's up to you to solve the case. Once upon a time, it was all so simple. The FCC assigned certain frequencies for police (including many other designated law enforcement agencies) and other frequencies for fire suppression. All you had to do was look in the book. But just when you finally knew the rules by heart, they changed the rules. Most of you know that police and fire units can operate on frequencies designated as *Local Government* (FCC license code PL). They can "mix and match," with a single department using both police (FCC license code *PP*) and *PL* channels. In some instances, the FCC will give a city or county an entire group of PL frequencies, allowing the local officials in charge to use them any way they want: some channels for the police, some for the fire department and some for the dog catcher and building inspector. They might even decide to let the police use the building inspector's frequency at night. In the 851-866 MHz band, there are no separate frequencies for Police, Fire, etc. They are all *"Local Government."*

To simplify licensing in a mix-and-match situation, the FCC may put both PP and PL frequencies on the same license and issue it as a Police license. Forget what the FCC assignment tables say. If there are no available frequencies in one Radio Service, and unused frequencies in another, the FCC may reassign the latter. We've seen railroad frequencies assigned to police departments (and licensed as PP).

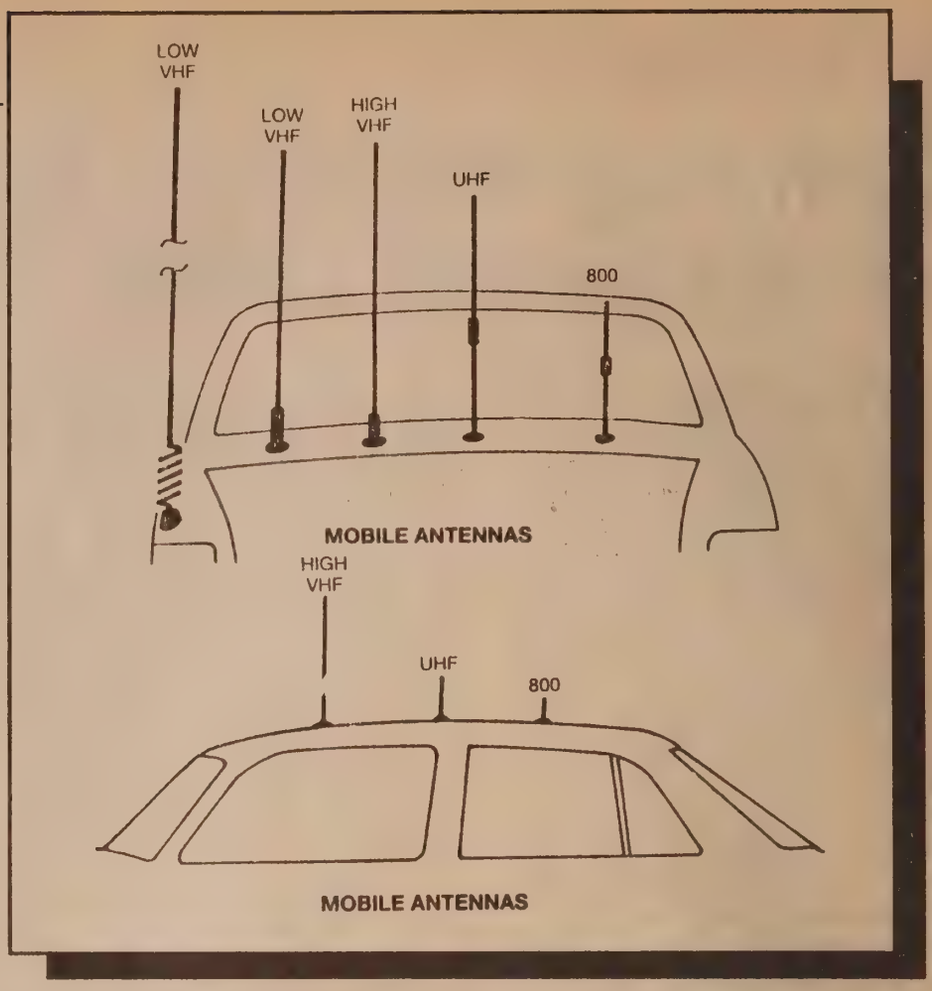
The FCC is very flexible about licensing, as long as there is no base station involved. In California, for example, the state is licensed for 10,000 mobiles and 20,000 portables on 156.075 MHz, a frequency used for coordination between various public safety agencies at the scene of an incident. Every approved public safety agency may operate under the one license. A county may choose 153-.83 MHz as a fireground frequency for all the fire departments in the county. As long as no other base stations are involved, the county is licensed for everyone. Police cars from the city of Niceville can use the frequency of neighboring Pleasantville for mutual aid, without a separate license. Smaller communities are joining together to take advantage of centralized dispatching of law enforcement, fire suppression and medical aid. One license suffices for all the agencies involved: one member of the group, the county, or a special authority set up just for dispatching. Keep in mind, that all base stations must be licensed. Frequencies used for surveillance



are harder to find. Under the rules, a law enforcement agency may use any Public Safety frequency (Police, Fire, Emergency, and even Highway Maintenance) for surveillance, without a license, as long as it uses low-power equipment and does not cause any interference to another agency.

WARNING: The low-power signals cannot be heard at a distance. If you do hear a surveillance, it's probably close to you. Stay away from the area, and don't tell others about it. You could get into serious trouble. The same procedures hold true for trunked systems. A license is issued to the operator of the system. Other agencies may use the system, without a license. In Southern California, fifteen municipal fire departments share the Orange County trunked fire radio system.

So far, we've pointed out the many possibilities that exist under the FCC rules. Ironically, there are law enforcement agencies (and others) that are breaking the law when it comes to the use of radio. The most commom is operating without a currently valid license. Licenses must be renewed every five years: An expired license is the same as no license at all. The reports we receive would tend to confirm our estimate that there are several thousand police departments, fire departments and other Public Safety agencies using radio even though their licenses have expired and not been renewed (what if you were given a ticket for having an expired drivers license, while the officer's radio system was operating with an expired FCC license?). Many police departments, at night, use the frequencies licensed for street maintenance and other government activities. Let's review. Check out every possible frequency in your local community, township, county, neighboring communities and the state. Do any of them have a trunked system? Don't overlook any clues. Further suggestions. The vehicle antennas are a clue to the frequency band being used. The accompanying diagrams illustrate the various types of mobile antennas. This will help you narrow down the possibilities, especially if it is a trunked system.



COURTESY POLICE CALL

Check your local telephone directory. In addition to "9-1-1," the directories usually list a conventional number for police, fire, ambulance, etc. If the phone number for your community is the same as another nearby town or county, you may be pretty sure that both are being dispatched from the same location.

Don't be afraid to call or visit your police and fire departments and ask who does the dispatching. There is no law that says they have to tell you the frequencies, but as a taxpayer, you are entitled to know how they are spending your money.

Part of the fun and excitement of any hobby is discovering something new. But beware! The constant search for new frequencies can result in severe loss of sleep.

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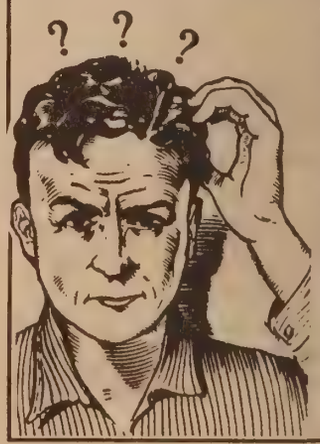

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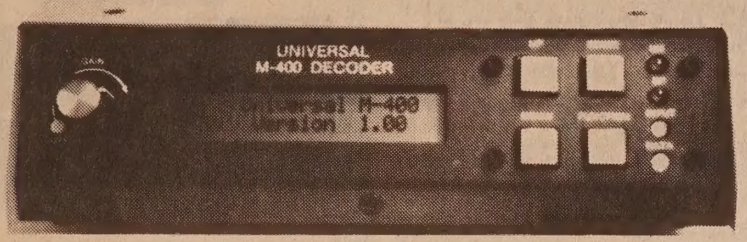

Many early teletype listeners started their monitoring hobby with code readers. However, readers have fallen out of favor in recent years because of their limited performance, limited mode coverage and lack of features. The M-400 reverses this trend, providing a high quality demodulator, extensive mode coverage, state-of-the art display and parallel printer port. The Universal M-400 incorporates capability never seen in a reader before. It is the ultimate affordable accessory for the SWL and the scanner enthusiast.

The M-400 provides all the benefits of a reader, without the limitations. The M-400 is totally self contained; there is nothing else to buy. It is compact and operates from 12 VDC making it a natural for auto or boat installations. The two line liquid crystal display provides a (40) forty characters readout (not just 8 or 16 like other readers). This super-twist LCD can be read from any angle, and the front of the M-400 is sloped to provide the optimum in viewing and operating convenience. LED indicators for *Mark, Space, Input* and *Data* are provided. A gray, all-metal cabinet provides a solid look of quality. For the shortwave listener, the M-400 provides all the standard reception modes ... and then some.

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- **SITOR A and B** are extremely popular teletype modes on shortwave. SITOR is used for communications between ships and coastal stations.
- **FEC-A** is a new press-diplomatic mode gaining wide acceptance primarily in Europe. Extensive FEC-A traffic can be monitored in North America during the day.
- **ASCII** at 75, 110 and 150 baud.
- **SWED-ARQ** This Swedish diplomatic mode can be copied in the U.S.A. during the day.
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- **DCS** (*Digital Coded Squelch*, also referred to as *Digital Private Line*) all 104 standard codes.

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- **SITOR A**
  ARQTOR, Amtor A
- **SITOR B**
  FECTOR, Amtor B, NAVTEX
- **ASCII**
  75, 110 and 150 baud.
- **SWED-ARQ**
  3, 9 or 22 character groups.
- **FEC-A**
  96, 144 and baud.
- **Facsimile (FAX)**
  120 LPM 576 IOC
- **POCSAG**
  Digital pager mode.
- **GOLAY**
  Digital pager mode.
- **ACARS**
  VHF Aviation teletype mode.
- **DTMF**
  16 digits
- **CTCSS (PL)**
  41 standard frequencies
- **DCS (DPL)**
  104 standard codes

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Dimensions	8.75"W x 2.5"H x 8"D
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Display	LCD two line 40 char. total
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Speaker Input	4-16 Ohms 100 MW max Mono mini jack (1/8")
Discriminator Input	10K Ohms .25V max Mono mini jack (1/8")
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Printer Output	Parallel ASCII 8 bit Centr.

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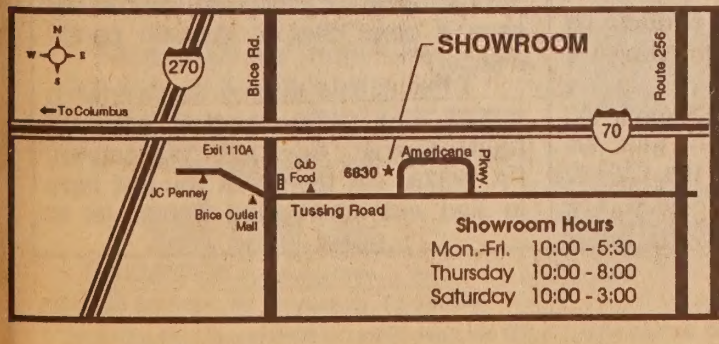

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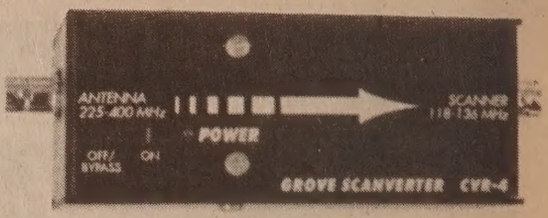
CVR-4 Military Air Scanverter

Check Six!



You can hear him. Up there at maybe 25,000 feet. Sounds like he's in a high speed descent, whistling and roaring through the flight levels. Rather sadly you look at your scanner. Civilian aircraft you can hear just fine, but military...well, you just can't afford a scanner with the military aircraft band yet. So you listen and you wonder who that jet jockey is talking to and what he's doing up there. And you look at your scanner again, and sigh.

The 225 to 400 MHz band is where both air and surface military units do much of their communicating. From top guns yanking and banking after a bandit, mud movers rolling in to drop on a target, tankers vectoring fighters in for a drink of precious fuel to ships launching helicopters and firing the big guns, armed forces activity lives and breathes in this band. A band that's very rarely seen on any but the most expensive of scanners. Is there a scanner user who hasn't whined at one time or another about their scanners' lack of military air coverage? Well, whine no more.

A North Carolina company, called Grove Enterprises, recently introduced the CVR-4 Military Aircraft Scanverter. Its sole and driving purpose is to give military air capability to scanners that can only receive 118 to 137 MHz civilian air. The technique used to do this is called band stacking, a design in which a large spectrum is broken into smaller ranges which are piled on top of each other. The CVR-4 will convert any frequency between 216 to 420 MHz to a range your scanner is able to hear.

The unit measures 4 in. high by 1½ in. wide by 2 in. deep and weighs six ounces. Removal of two screws opens the cover for installation of a nine-volt battery (not supplied) which is the sole power source. There are no provisions for attaching an outboard power adaptor, which is a loss if you're using the CVR-4 with a base unit at home or work. Prolonged use means you'll go through 9v batteries quickly. The unit comes with a universal antenna adaptor kit, allowing easy attachment to BNC or Motorola jacks. Just attach the antenna adaptor to the scanner end of the CVR-4 and snap in onto the antenna jack of your scanner. Pop your helical or external antenna onto the other end of the Scanverter and you're in business.

A sliding power switch allows the unit to be switched off when civilian air listening is desired. Otherwise, the brilliant orange light tells you that you're in military air mode. Specifications claim a bypass loss of 2 decibels at 400 MHz, and 6 decibels at 800 MHz. I noticed very little degradation of signal with the CVR-4 in-line and switched off. This is good news, as it means you won't need to disconnect it when you're finished. With the unit connected to a BC200XLT, I tuned 272.6, a Navy controller that takes care of the warning areas offshore of San Diego. Using the conversion chart, I found that tuning 128.6 would allow reception of 272.6 MHz. You can also compute the range yourself by subtracting any multiple of 18 MHz, as the CVR-4 works by tuning harmonics of its 18 MHz oscillator. Frankly, I never was one for math, so using the conversion chart would be a daily affair. Snip it out, laminate it and take it along for mobile work.

Reception of 272.6 was decent, but I felt it could have been better. With a discone antenna attached to a PRO-2006 on the same frequency, the controller was heard clearly with full quieting. The 200XLT and the CVR-4, working together with the same discone feeding them signal, didn't quite get the clear reception I would have liked. I'm nitpicking, but I do a lot of military air listening and need signals to be as clear as possible.

The manufacturer claims sensitivity of one microvolt and out of band interference rejection. The first CVR-4's off the bench had a habit of receiving FM broadcast signals, but this has been remedied. Interference from out of band is almost nil. I did find that tuning a frequency such as 266.9 by entering 122.9 allowed reception of 230.9, 248.9, 266.9 and seven other multiples. Anyone talking on any of these frequencies could be heard on 122.9. The manufacturer says that this is common but "such instances are rare in the sparsely populated UHF military aircraft band." Maybe in Brasstown, where the unit is made, but here in San Diego with its plethora of military bases, signal overlap is a very real possibility. I can't complain, however, as it allowed me to find a new frequency - 302.9 - where a flight of F/A-18's were chatting on their way up the coast. In reality, this shouldn't be too much of a problem.

The CVR-4 will definitely fill the bill for airshows, where strong, close signals will be easily heard. Grove says simultaneous civilian air and military air reception is possible by attaching a separate antenna in the top hole of a base scanner, or connecting a standard TV two-way splitter. For base use, the Scanverter works well for casual listening, but some of the often weaker air to air transmissions might be missed. Your antenna, scanner and location will have a great deal to do with performance.

The CVR-4 Military Scanverter is $99.95 plus $4.00 shipping from DX Radio Supply, Box 360, Wagontown, PA 19376. Tell them that you just have to find out where that fighter jet is.

By Laura Quarantiello

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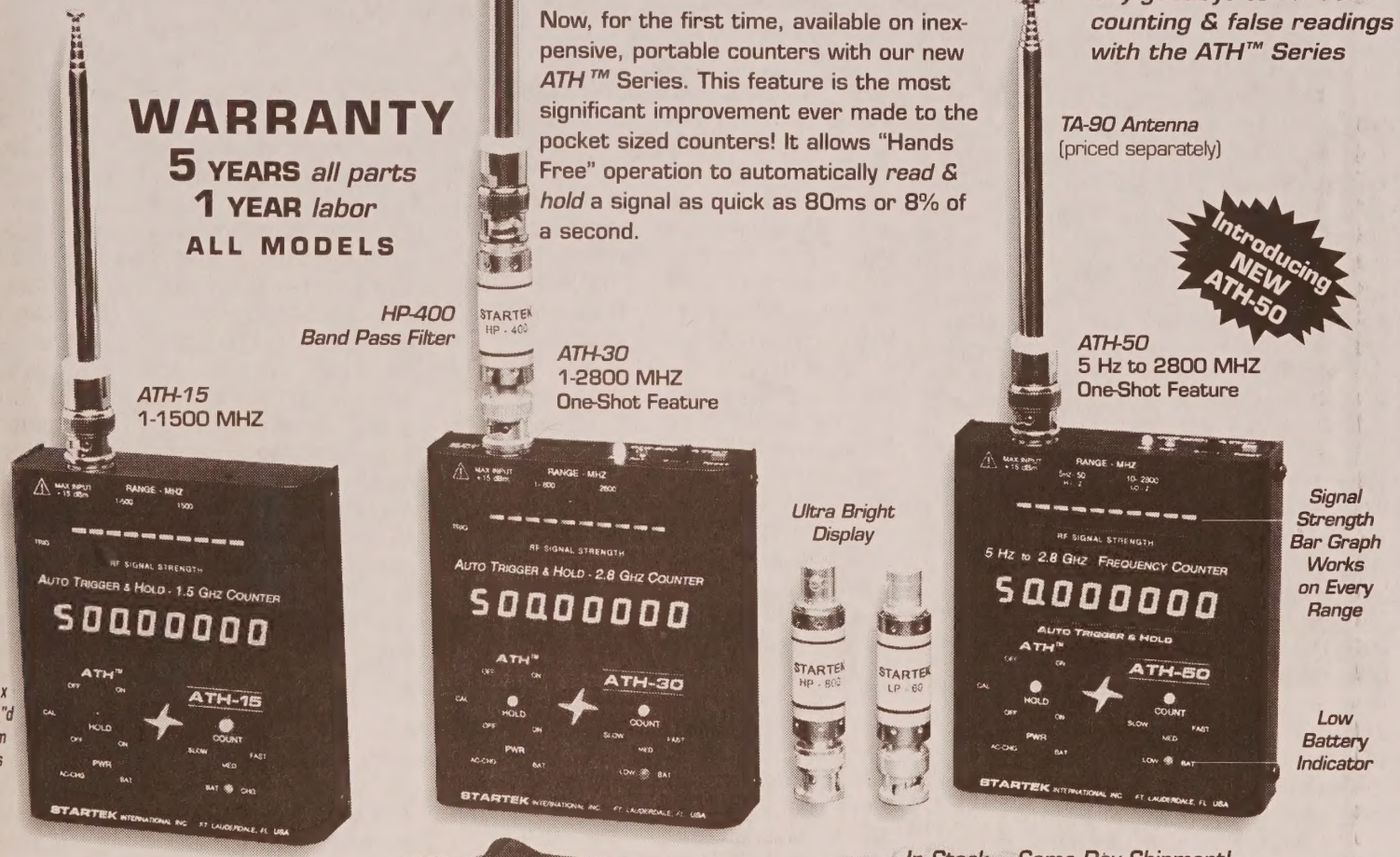
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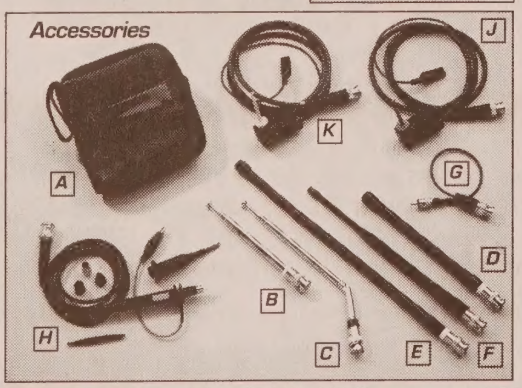

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